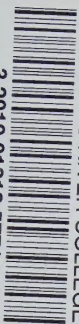


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PAPERS

OF THE

PEABODY MUSEUM OF AMERICAN ARCHAEOLOGY
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VOLUME X

INDIAN TRIBES OF EASTERN PERU

BY

WILLIAM CURTIS FARABEE

INTRODUCTION

BY

LOUIS JOHN DE MILHAU

*TWENTY-EIGHT PLATES AND TWENTY ILLUSTRATIONS
IN THE TEXT*

CAMBRIDGE, MASSACHUSETTS, U. S. A.

PUBLISHED BY THE MUSEUM

1922

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TO
LOUIS JOHN DE MILHAU
PATRON
PARTNER IN HARDSHIPS
ON MANY TRAILS

INTRODUCTION

By good fortune, when a junior in Harvard College, I became a member of the party organized by Dr. Farabee to explore the interior of Iceland during the summer of 1905. While this is not the place to tell the story of that expedition, I refer to it because it was due to my association in the field with Dr. Farabee at that time that the South American expedition which forms the subject of this volume became a reality. Both my companion, John Walter Hastings, and myself became intensely interested in the general subject of anthropology, and particularly in the field work connected with it. On our way home from Iceland, we decided that there would be an expedition during the next year and that Dr. Farabee would be the leader of it. The details were worked out during the following winter. The interior of Peru, east of the Andes, was selected as a most promising and virgin field, for this was before the days of the numerous university expeditions which have since followed one another into the South American jungle.

The expedition was under the auspices of the Peabody Museum. Besides Dr. Farabee, the party consisted of Hastings and myself as ethnologists, and a surgeon, Dr. Edward Franklin Horr, who had served for a number of years in Cuba and the Philippines as an officer in the Army Medical Corps. President Roosevelt found time, amidst his numerous activities, to receive Hastings and myself at the White House, when he wished us luck, and gave us a strong personal letter to all our diplomatic officials. His Eminence, the late Cardinal Gibbons, wrote for me a letter which was an open sesame within ecclesiastical circles at the Vatican and elsewhere. Many others, too many, unfortunately, to mention individually, in a limited space, gave evidence of their interest and good wishes toward us. In December, 1906, Dr. Farabee, Hastings, and I sailed from New York, southward bound, followed some weeks later by Dr. Horr. On our arrival in Lima, we were officially presented to the President, Señor Pardo, and his

Minister of Finance, Señor Leguia, now President of the Republic, and were the recipients of many courtesies and hospitalities from both Americans and Peruvians. From Lima we continued to Arequipa, where is situated the Harvard Observatory, which city became our base during the time we were in Peru. A short period was devoted to preparation for the actual field work and to short side trips to La Paz and other nearby places. Little could be learned of conditions in the interior beyond the mountains, and so the first journey was somewhat in the nature of a preliminary investigation of the field.

In all, three journeys were made across the Andes and down into the lowlands running eastward from the Atlantic slope of the mountains, as is shown in the map, plate 28 of this volume. On the first incursion, which lasted about six months, we started from the station of Tirapata on the then uncompleted railroad to Cuzco, and went over the tableland and through Aricoma Pass, at an elevation of 16,500 feet; whence the trail descended the eastern slope of the mountains to the rubber camp at Astillero on the Tambopata River. There we waited, short of food and tobacco, for six weeks, until the flooded river could subside sufficiently for canoe travel. From this little settlement we proceeded, with many halts, down the Tambopata and Madre de Dios to Rivera Alta on the Beni and thence overland to Guayamerin, on the Marmoré. Ascending this last river and its tributary, the Chaparé, we found ourselves at the trail head in Bolivia, whence a journey on mule-back brought us to the city of Cochabamba. The arrival of the pack train with its party of "Norte Americanos" which, after six months in the field with limited impedimenta, was a pretty rough looking crowd, created somewhat of a sensation in the plaza. It was with great difficulty, later, that the Faculty of the University of Cochabamba could be convinced that such a band could really be "scientificos" from a great university. A stage trip to Oruro and La Paz and a voyage across Lake Titicaca brought this first journey to a close. Hastings and I shortly afterward returned to the United States, leaving Drs. Farabee and Horr to continue the work of the expedition. The sudden and accidental death of Hastings not long after his arrival home was a great shock to all of us, who will remember him with affection as a good comrade and true friend.

The experience gained in the first journey was most helpful in planning the second, during which the party, starting from Cuzco, descended the Urubamba River, past the ancient fortress Ollantaytambo, the scene of the defeat of Hernando Pizarro by the Inca, Manco Capac, to Cahuide near where the river is joined by the Paucartambo. Here the expedition spent three months in camp with the Macheyenga Indians, returning to Cuzco, via the Yanatile River, Lara, and the ancient sun temple at Pisac.

The third journey was the longest and in many ways the most important. The Peruvian Government, which, at this time, was



Members of the Expedition in camp on the Tambopata River; seated, left to right, Dr. Farabee, Dr. Horr, Mr. de Milhau, Mr. Hastings

interested in the extension of the railroad at Cerro de Pasco to some navigable point upon the Ucayali River, invited the members of the expedition to accompany the party of engineers engaged in making a preliminary location and survey. This invitation was particularly attractive, because it was anticipated that the party would pass for more than a hundred and fifty miles through an unknown territory supposedly inhabited by savage tribes, where opportunity would offer itself to make observations and collections. As a matter of fact, these anticipations were only partly realized, as only a few tribes were encountered along the

rivers, the great interior showing no traces of inhabitants, either past or present. The route of the party was from Cerro de Pasco via the Pichis road through Tarma to the Pachitea River. Descending this river to the Ucayali, the party then embarked upon a government launch for Iquitos, at which port Dr. Farabee shipped to New York by Atlantic steamer the collections which had been made en route. From Iquitos, which is just below the point where the Ucayali and the Marañon form the Amazon, the party followed the latter river to Tabatinga upon the border of Brazil and then, retracing in part its steps, returned to the West Coast. The homeward route was along the Amazon, Ucayali, Urubamba and Mishagua Rivers to the divide at Varadero Vargas, whence a portage was made to the Manu River, which was followed to the Madre de Dios. From this river the party came to the Andean plateau over the route by which it had descended into the interior upon its first journey, namely by the Tambopata River to Astillero and over the mountain trail to Tirapata. During the eleven months spent in the headwaters the expedition was able to do much work among the tribes of the Panoan, Arawakan, Tupian, and other stocks, the results of which are set forth in this treatise. In addition a great deal of geographical work was done, including the taking of observations and the mapping of a hitherto unknown region, a full report of which was made to the Peruvian authorities.

The work of the expedition was done under varying and trying conditions, sometimes in the cold high altitude of the Andean plateau, at other times in the torrid jungle of the Amazon headwaters, in dry season and in rainy, under a blazing sun, or in the chill of a "temporal" from the mountains. Transportation was by almost every conceivable method; by steam train, hand-car, stage coach and horseback in the mountains (to say nothing of one well remembered nightmare of a ride up the eastern slope of the Andes from the Chaparé to Cochabamba upon the pack saddles of a mule train returning from the delivery of its cargo at the trail's end), by river steamer, by rowboat or native bark canoe, or on foot. The food, too, varied from the garlic impregnated dishes of the Spanish hotel to the roast monkey and parrot of the hospitable savage. Malarial fever was a constant and unavoidable companion, but aside from this affliction, and the pests of small and biting things that flew or crawled, we remained in good health without

serious illness or accident. The success of the expedition is primarily due to the leadership, tireless energy, tact, and ability of Dr. Farabee; while Dr. Horr, the surgeon, was responsible in great part for the good health of its members, and also for the prestige which it acquired by the presence of an untiring and unselfish physician, whose services were called upon frequently by Whites and Indians wherever he went. Besides the material results of the expedition, as shown by this volume, by the collections in the Peabody Museum, and by the scientific observations of various sorts, reported to the Peruvian Government and to our own, I believe that it has been not unhelpful in promoting to some degree right understanding and good will between Peru and our own country. Indeed, I think I may say that Dr. Farabee's appointment as an honorary member of the Faculty of the University of San Marcos at Lima (the oldest university in both Americas), and his selection by President Harding as one of the American Commission to the Peruvian Centennial, with the rank of Envoy Extraordinary, are good evidences of this fact. While the appearance of this volume has been somewhat delayed, for many reasons, including among others, Dr. Farabee's absence upon other and distinguished explorations in Brazil and the Guianas, I am glad of its publication at this time, not only because of its scientific value, but also because it is, in a way, an appreciation of the splendid work accomplished by my comrades of the expedition.

LOUIS J. DEMILHAU.

NEW YORK, January 5, 1922.

ACKNOWLEDGMENTS

It gives me pleasure to acknowledge my indebtedness to the following persons who contributed so largely to the success of the expedition: to Mr. Louis J. de Milhau, whose splendid liberality made the work possible, for advice and assistance in the field; to the late Professor Frederick W. Putnam, for instruction and hearty coöperation; to Mr. John W. Hastings, who will always be held in affectionate memory by his comrades; to Dr. Edward Horr, my constant companion and efficient assistant for three years, for looking after the health of our party and administering to hundreds of natives and Indians along the way; to the Inca Mining and Rubber Company for transportation and supplies; to the numerous Government officials and others in Peru and Bolivia whose assistance and genial hospitality made our travels so enjoyable; to Mr. Charles C. Willoughby, Director of the Peabody Museum, for putting the volume through the press.

WILLIAM CURTIS FARABEE.

CAMBRIDGE, MASSACHUSETTS
August 30, 1921.

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INDIAN TRIBES OF EASTERN PERU

ARAWAKAN STOCK

MACHEYENGA

Distribution. The Macheyenga, an Arawakan tribe related to the Campa, occupy the territory along the middle course of the Urubamba River and its local tributaries. With other Campa tribes these Indians were in contact with the Inca east of the Andes, but were never absorbed by them. The Inca applied the term "Antis" to all the tribes without distinction, but the Campa group called themselves by different local names and were known to the interior tribes by these names. On the middle course of the Urubamba River they are known as Machiganga; on the Perene, as Acheyenga; and at San Lorenzo, as Acheñega. The present study was made at Cahuide on the Yavero, or Paucartambo River, a branch of the Urubamba above Pongo Manique, Peru.

A few years ago some forty families of the Macheyenga lived in the vicinity of Cahuide, contented and happy; but today, on account of the raids of slave traders, there are but six or eight families left, numbering about twenty individuals. No enumeration of the Macheyenga has ever been made, and no exact information can now be secured because of the system of carrying away the children and selling them down river where they soon lose their language and identity. A very rough estimate, based upon careful inquiry in many localities, would be about two thousand.

Most of my information was obtained from two very competent authorities: Sr. Max Richarte, a very intelligent man of good family and education, who had lived for several years among the Macheyenga and spoke their language; and the best possible authority, Simasiri, a Macheyenga boy, whose father at his death had given him to Richarte. Simasiri was taken to Cuzco, where he lived in Richarte's family, and attended school for five years. He spoke and read Spanish very well. A year before my visit he

was taken back to the interior to serve as an interpreter among his own people. We found him at Cahuide, and had him with us for three months. After his return to the interior, he met one of his cousins who told him of the fate of his family. His father and mother had been captured and sent to different places down river; his sister had been dressed up and sold to a rubber gatherer; his brothers had been killed, and he alone had escaped. Simasiri was so angry at these acts of barbarism perpetrated by white men, that he threw away his civilized clothing, put on his old Indian dress, and went away into the forest to live with the savages. The Peruvian Government has since prohibited this slave traffic, and punished the offenders. I was delighted to see one of the worst offenders against this tribe carried away in chains for trial.

Organization. There is no tribal organization, no tribal meetings, and no chief of the whole tribe. Each locality, comprising a few families situated near together on the same river or near the confluence of two rivers, has its own curaca, or head-man, who is selected because of his ability and influence. The habits of life of these tribes do not encourage organization. They have no large villages, or large communal houses. There are, instead, several families living along the banks of a river in the same vicinity, each with its own chacara, or small clearing, in the fertile lowland, where an abundant and constant food supply is guaranteed. There is no criminal code or system of punishment, because there are so few criminals. Theft, unfaithfulness, and murder are practically unknown. If children are too intimate before marriage, they are severely beaten by their parents. A lazy man is compelled to work because no one will give him food, yet anyone will allow him to work in his field for food.

The Macheyenga are not war-like, but when other tribes carry off their women they declare war. The women and children go to war with the men, carry arrows, and have them ready as fast as needed. It has been reported that they use poisoned arrows, but they know no arrow poison.

Hunting and Fishing. In hunting and fishing, the Macheyenga use a very strong flat bow (plate 3) made of chonta palm (*Oreodoxa*), five feet long and an inch and a half wide. The bow is held upright, with the surplus fiber string wound around the lower end. The arrow is held under the forefinger on the left side of the



Macheyenga Indians

bow. The bow is drawn with the thumb and index finger holding the arrowshaft on the string. The arrowshaft is made of the straight top of the wild cane (*Gynerium saccharoides*), and is three or four feet long. The feathers are put on spirally, wrapped with cotton thread, and pitched. The foreshaft is made of chonta palm or bamboo, without any other point. Different types of arrows are used for birds, fish, monkeys, and pigs. The men hunt and fish together, and divide the catch. There is no definite rule about the division of any particular animal, or of the whole catch. They use also a number of devices for capturing birds and animals.

The latex of the *Castilloa elastica*, or that of some other tree, is used to make a sort of lime which they call "popa." With it they catch birds by smearing limbs of trees frequented by them. For big game, sharpened sticks are planted in their runways. For smaller animals, snares are made by planting two poles in the ground, one on either side of the runway, wider apart at the top than at the bottom. A double rope is placed around the poles, five or six feet up; hanging from this double rope is a double loop with a slip-knot hanging near the ground. An animal passing through in either direction picks up the noose, which pulls tight around his neck, strangling him to death. This is one of the simplest and most effective snares in use among any people. They build a blind near the water hole of a certain animal or bird, and shoot it when it comes to drink. They know the habits of the animals, and the times of day they usually take water.

For catching fish they never use the hook, but have other devices. A very small flat fish, three to five inches long, which feeds under stones in shallow water, is caught in the hands, and killed by biting it through the head. When the rivers are in flood, the fish feed along the shallow water. To catch these the natives use a small round net about three feet in diameter, fastened on a bent pole which they hold in their hands, and push before them as they wade along the banks. They use a large net with stone sinkers for seining in the deep holes along the small rivers. These nets are very well made of cotton strings, with small oval river stones notched and pitched to hold the string.

Their most successful and ingenious method of catching fish is by building a trap and using poison. A narrow shallow place in a small river is selected, and wings of stones are built on both sides

in order to confine the water to a space fifteen or twenty feet wide, as shown in figure 1. At the inner ends of the wings, long poles are so placed that the upstream ends are on the ground, and the other ends held in forked sticks. Across these poles are placed others in a horizontal position, the upstream one being under the surface of the water. Then a large mat, about twelve feet long and eighteen feet wide, made of wild cane and bast, is so placed upon this platform of poles that the upstream end is under the surface of the water, and the other end is two or three feet higher. The sides of the mat



FIGURE 1

Macheyenga Indian fish trap

are turned up about a foot to prevent the fish from rolling off into the water below the wings. All the poles and the mat are held in place and made secure with well-tied lianas or vines. The mesh of the mat must be just the right size; if too large the smaller fish will get through, if too small the resistance to the rapid water will carry the trap away. After some three hours of hard labor for half a dozen men, the trap is completed, and the time for rest has come. While the trap is being made, some men collect bundles of roots of the *cavenithi*, a small shrub which grows abundantly in the neighborhood. These roots are taken a mile or more upstream, and pounded on the rocks in the river. The fish along the river for the whole distance, overcome by the poison, rise to the surface, and float out on the trap, where the largest ones are

gathered up, and the smaller ones thrown back into the river to float on for possibly another mile before recovering from the effect of the drug. By this method practically every fish in the river is captured, but the device has its limitations: it cannot be used in large rivers, deep water, or small streams; and the trap is carried away by the first high water. The poison has no deleterious effect upon the flesh of the fish, which may be eaten without danger.

All Indians in the region are very successful in imitating the cries of animals and birds. They are thus able to call them within range of their arrows, or to approach near to them. On the river or trail they continually call for the game which frequents that particular vicinity. The grunt of the pig, the whistle of the tapir or the monkey, and the call of the turkey-like curassow, are each perfectly reproduced. When hunting or on a journey, an Indian always carries over his shoulder a coil of cord which he loops around his feet when he climbs trees for game, fruit, nuts, or vines. The loops catch over his insteps in such a way as to allow him to clamp his feet against the sides of the tree.

When the trail crosses a river which is not too wide, a very serviceable bridge is built by felling a tree from either side, and connecting the two with long poles and cross sticks.

Preparation of Game. Fish are drawn, scraped, thoroughly roasted, and smoked with the head left on. Birds are plucked, washed, scraped, and drawn, and then either boiled or roasted. At home the commonest method is to cut up the bird, and boil it with plantains in a large pot. When traveling, everything is roasted: game, plantains, and yucca.

Monkeys and pigs are always singed, thoroughly washed in the river, scraped, and drawn. The intestines are carefully cleaned and eaten. They are considered great delicacies. The flesh is roasted and smoked. A big fire is built, and the animal is held in the flames until all the hair is singed off; while it is being dressed, the fire has burned down until a large bed of live coals remains, then a barbecue is made over them, and the flesh slowly roasted with the cut surface upward, so that all the juices are held in the meat.

When on a hunt it is always necessary, on account of the heat, to stop early in the evening to roast and smoke the meat to preserve it. When traveling, fresh meat is preserved for five or six

days by placing it over the fire every evening. At home the meat is kept hanging over the fire in a suspended tray or on poles, until it is all consumed. The tray is made by bending a stick or vine into a circle two feet in diameter, and weaving in strips of bast. The smoke preserves the meat, and keeps away the flies. The tray keeps the food out of reach of dogs and other pets.

All members of the family eat together, and any strangers or visitors present eat with them. They use salt freely on their meat and roasted green corn, but use no other mineral foods.

Household Utensils. The Macheyenga make a very rude coarse pottery for cooking purposes, and for water storage. All their food bowls and finer ware they get from the Conebo by exchange. They make baskets of palm leaves for all kinds of temporary use. For storage of trinkets, clothing, etc., they make a very good telescope basket of wild cane, two feet or more long, a foot wide, and when extended, one and a half feet high. They still use the peccary tusk knife, but depend upon steel knives for hard usage. When using a modern knife, they sharpen it on one side only, hold it with the blade at the ulnar side of the hand, and always cut with a drawn stroke; or, in other words, they use it as they do one of their own knives.

Fire is made by twirling a stick between the palms of the hands. A certain kind of palm tree called "mokavirintchi," has root-stalks growing above the ground. These are cut, and when well cured, one is flattened for the hearth, and another rounded for the drill. There is no tradition about the origin of fire — they "always made it this way."

Drinks. Chicha, a fermented drink, is made by young women from cassava and corn. The sweet cassava (*Manihot aipi*), a starchy tuber, after being boiled and cooled, is chewed by the young women until the saliva is thoroughly mixed with it, and then it is placed in a wooden trough in the sun for four or five days to ferment. The corn is ground very fine by rocking a semi-lunar-shaped stone on a flat one used as a base. The corn meal is then placed to soak in a trough of water. When fermentation has progressed sufficiently, the corn and masticated cassava are mixed together in a larger trough with more water, and allowed to stand two or three days longer. While the mixture is ripening, short stemmed gourds are prepared for the storage of the chicha. The



Macheyenga Indians: *a*, Weaving cotton cloth; *b*, Making chicha

mass is then dipped from the trough with a gourd, strained through a long basket into a large pot, and poured through a funnel made of corn-husks into neckless gourds which hold about a gallon each, as shown in plate 2, b. The operator continually expectorates into the gourds as she fills them. When all are filled they are corked with corn-cobs, and set away for future use. We saw them make ten gallons at one time. When fresh, chicha is a pleasant refreshing drink, but in a few days it becomes very intoxicating. As a matter of hospitality it is always offered to visitors, who must, of course, accept and drink it. Fortunately one learns to drink, and to relish it, before he knows how it is prepared. Once the appetite has been formed, sentiment no longer affects the stomach. The natives drink freely, but seldom to excess.

The Dance. There are no established dances for regular seasons of the year. When there is a wedding dance it comes at the first of harvest season, but there may not be a wedding each year. The visitor's dance is given at any time when a few persons come from a distance. This is the men's dance and takes place around a fire on the outside of a house. The leader carries a small drum which he taps with his fingers while the men catch hands and dance in a circle. They may dance every day for a week; it is just their method of entertainment and means nothing whatever.

The drum is made by stretching the skin of a howling monkey across the ends of a hollow tree trunk eighteen inches long and twelve inches in diameter. The snare is prepared by stringing beads on a cord across one end. The skin is placed in wood ashes to remove the hair and to tan it. This is the only use made of the skin of any animal. The drum is used for dances, and for a man's amusement when he is drunk; he lies on the floor and taps the drum with his fingers by the hour. Upon hearing the drum, I went many times, and always found the same thing true, — some fellow was lying on the floor on his back, tapping the drum, while no one else was paying any attention to it.

Tobacco. The men grow their own tobacco, "sedi," and smoke it in large wooden pipes, called "penarintei," made of the root of a tree called "camona." They do not use tobacco in any other way. The pipe has a long tubular bowl with a short bird-bone stem set at a right angle, similar to the one shown at the left in figure 7.

Games. Children play few games. The principal ones are shooting at a target with bows and arrows, and throwing seeds at each other. They have no ball or stick games of any kind. The boys blow up the bladders of animals and use them for balls. The girls are taught to make cats cradles. The following examples were obtained at Cahuide. They are the very simple types found in many parts of the world.

Guatuari, a snare. String around the neck, right hand string around neck again; right string under left forming a loop with rest of string; loop over the head with the cross of strings behind; pull the loop with both hands, and the string comes off the neck.

Yobateaka, a trap. Left hand palm vertical with string around hand on top of thumb; index of right under palm string, between thumb and index of left, hook over dorsal string, pull through, twist palm of right up, loop over index of left; repeat between each finger with loop over the next; release the thumb; pull palm string and the animal escapes.

Sitikali, releasing the fly. String around thumb of left hand with both strings on the dorsal side; wrap once around the wrist; take up loose loop on right thumb; with right little finger take up the two palmar strings of the left from behind over the right thumb strings; with the right little finger take up the right thumb strings over the little finger strings; with right thumb and index remove the four dorsal strings of the left hand to the palmar side, thus making a knot of all the strings between the palms, with one loop over each thumb and two over each little finger; slap palms together, release little fingers, and draw apart showing string on thumbs with no knot.

Taboringa, shelters. Loop around middle fingers; take up on thumbs the ulnar string over the radial; take up radial on little fingers; take up middle loops over thumb strings with opposite ring fingers; slip thumb strings and take them up over middle finger string; slip little finger strings and take them up over ring finger strings; slip middle and ring finger loops; draw out and a double diamond remains between the palms.

Potengia. Same as the last, except that the ring finger strings are twisted once toward the thumbs when put on.

Ani, river. Loop over thumb and index of left hand and thumb of right; hook over string between thumb and index of left with

index of right and take up with turn to right; little fingers under ulnar index, over radial index strings and take up ulnar thumb string on backs of little fingers; release thumbs; take up radial little finger strings on backs of thumbs over index strings; place index loops over thumbs also; place former thumb string loops over little fingers; take off former little finger loops; release indexes; draw out and a double string winds around the outside strings like the bends of the river.

Sigarintci, spider's web. Loop over the thumb and index of left hand and thumb of right; hook index of right over string between thumb and index of left and take it up with turn to right; little fingers under ulnar and radial index strings and take up ulnar thumb string on backs of little fingers; release thumbs; take up radial little finger string on backs of thumbs; place index loops over thumbs; take off former thumb loops; place ends of indexes downward through former thumb loops and turn palms outward releasing all but thumbs and indexes.

Pankotci, a house. String over thumbs and little fingers; take up palm string on indexes; take up ulnar little finger string in middle with teeth beneath other palmar strings and drop the loop over other strings; take up in middle at crossing in teeth the ulnar thumb string and radial index string, holding these until end; remove loops from indexes and little fingers, catching the two together (i.e. the ulnar of indexes and radials of little fingers) and place both over little fingers; take up on indexes from under ulnar side all strings between thumb and little finger strings, the loop thrown over by teeth first; place little finger loops with half turn to ulnar side over middle fingers; place thumb loops under other strings over little fingers; place index loops over thumbs with half turn, release strings from teeth and draw out, first shifting thumb and little finger loops well down and middle finger loops well up. A house frame with ridge pole, rafters, and plates result.

Dress and Ornamentation. The most common dress for both men and women is the cushma, a loose fitting sleeveless shirt-like cotton garment, which hangs from the shoulders and reaches below the knees, as illustrated in plate 1. Cotton is not cultivated, but wild cotton is collected by the women, spun into very fine thread, and woven into cloth (plate 2, a). To make a cushma, a

strip is woven four times as long as the required garment, and about a half yard in width. It is then cut into two pieces and sewed along the middle, except for about a foot in the center which is left open to slip the head through; the sides are sewed up with the exception of a small hole on either side for the arms. The woman's cushma has the hole for the head cut crosswise instead of lengthwise. The cushma is worn plain white, or dyed a dull red with the pulp of a plant called "atcohte" (*Bixa orellana*). Children run about naked until the approach of puberty. Among some of the groups all go naked a part of the time, others wear bark cushmas, and still others wear the breech cloth.

The cotton is gathered by the women, and stored in rough baskets made of palm leaves. The seeds are removed by hand, as the cotton is needed for spinning. The spindle is made of chonta palm about a foot long, with a stone whorl. The spindle rests in a gourd cup, and is spun by twisting with the thumb and fore-finger. The thread is used to make cushmas, bags, and bands for their arms and legs; or cord to make bags, nets, and ropes.

The ornamentation of these people is not profuse or elaborate, and is nearly the same for both men and women. The only object attached to the body is the nose ornament. The septum is pierced, and suspended from it on a cotton thread is a small thin disc of silver about the size of a dime, which just covers the lip. Often two or four small beads of stone or bone are worn on the thread with the silver disc.

On the shoulders, attached to the cushma, the women wear tufts of feathers, claws of animals, bones, and seeds. The men often have tufts of feathers and bird skins attached to the cushma, hanging down the back. These are mere ornaments, and have no significance whatever. The Macheyenga, along with many other tribes, admire plump arms and legs, hence the women always wear bands or cords of woven cotton around the wrists and ankles, and above the elbows. The men sometimes wear these same bands with monkey teeth attached. The women often wear long necklaces of different colored seeds, berries, pods of vanilla, teeth of monkeys and other animals, and bone beads (plate 3). All the people paint their bodies and faces in lines or spots, for no other purpose than the protection against the bites of flies.



Macheyenga bow and arrows, necklaces, and feather ornaments. (About 1/11.)

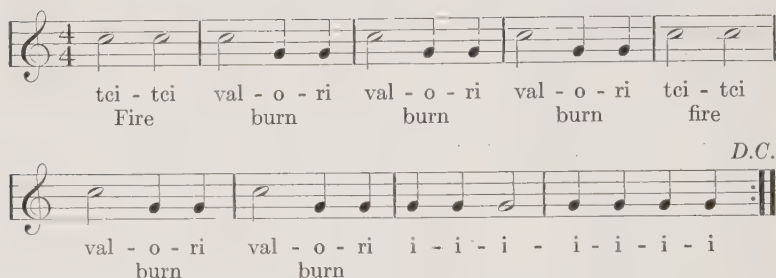
Diseases. The Macheyenga are a very hardy people, and are free from loathsome diseases. There are no evidences of tuberculosis, venereal diseases, or insanity among them. Many are pitted from smallpox and we saw two individuals who had each lost an eye from this disease. One is apt to mistake scars made by the bite of the vampire bat for pox marks. Many have such marks on the nose and forehead.

There is no medicine man but everybody knows certain herbs which are used for different diseases. Old persons consult together in serious cases. Malaria is common among them. They give no medicine internally, but in order to reduce the temperature they wash the body with a tea made from the roots of a tall grass called "chipanaci" that grows in swamps. They use the same medicine to attract fish to certain deep pools. The plant can be distinguished only by the flower, and as it was not then in bloom, we were unable to obtain it for identification. This plant is worthy of a careful study. For diarrhea and headache they make a tea of the leaves of the plant *Dioscorea*.

There are a few poisonous serpents in the region, and in spite of great care the natives are occasionally bitten. When one is bitten, he at once cuts the wound open and squeezes into it the juice of the leaves and bark of the cavinithi tree. The leaves and scraped inner bark are heated over a fire, and then the juice is squeezed into the wound. It is said to be a sure cure, preventing pain and swelling. The next day, to hasten the cure, the patient chews red peppers, and spits the juice on the wound. If allowed to sleep the patient will die, hence a great noise is kept up all night to keep him awake. One night we heard a loud noise which was kept up continuously, until we were unable to sleep. Upon investigation we learned that one of the men had been bitten by a snake the evening before. His leg was badly swollen, and he seemed to be in considerable pain in spite of their treatment. However, he recovered completely in a few days. The snake was not found, so it was impossible to know whether or not it was the most poisonous variety, as supposed.

Music. The Macheyenga sing a few songs, but cannot be considered musical. When men return from a long journey, they give a dance, and sing their experiences for the benefit of their friends. They catch hands and dance in a circle facing each other.

On the trail it is often difficult to get dry kindling, and fire-making is a slow and painstaking operation. As the man blows his fire, he sings the following song in a very low tone to encourage the fire to burn.



The second example is a cradle song used by mothers to soothe their children when sick or when put to bed in the evening. Two mothers singing at the same time usually sing in octaves on the outside tones, and come together in unison on the middle tones. No words are used, that can be heard, but all the notes were hummed in a very low voice.



The Dead. The Macheyenga have no fear of the dead. They handle the body with impunity, and dispose of it without ceremony. When anyone dies, two men, relatives or friends, take the corpse by the head and feet, and lay it on a litter made of two long poles with cross sticks. Then the same two men, or two friends out of courtesy, carry the litter head foremost on their shoulders to the river and throw it into the water. The body remains dressed in its cushma, as in life. No weights are used to sink the body, and the rapid current carries it away to be eaten by fish, or to be buried in the sands and debris along the shallow

banks. There is no ceremony whatsoever in connection with the dead, either at the house or at the river. When friends happen to be present, they usually carry away the body as an act of courtesy. If no one else is there, two members of the family do it. No one accompanies the two men to the river, and no ceremony is performed while they are gone. There is no reverence for the body. It is thrown into the river just as a dead dog or kitchen refuse is thrown in, at the same place, and apparently for the same reason. It is the most convenient, and at the same time the most hygienic method of disposing of the dead.

When one member of the family dies the others desert the home, and build another some distance away. They never return to the house, but if they have no other chacara, or clearing, they may return for food until the new chacara is ready to use, a period of eight or ten months. After that time another family may take possession of the old clearing, and live in the house. When a small child dies they throw the corpse into the river, but do not leave the house. In order to end the sufferings of helpless old persons and those about to die of some incurable disease, they throw them into the river while they are still alive. However, they take very good care of their sick and infirm so long as there is any hope of recovery.

They leave the house because they are afraid of the disease that took away the other member of the family, and for no other reason. The case of a child would seem to be an exception, but the adults have no fear of children's diseases. No ceremonies are performed when leaving the old home or when building a new one. As they have no belief in ghosts or in the return of the soul, there is no reason to fear the soul of the departed. Aside from their positive statements, the fact that others may and do live in the same house after a short time, is evidence that they have no fear of the house or of spirits about it.

Among some branches of the tribe, those killed in warfare are buried, while the common people are thrown into the river. A grave, four or five feet deep, is dug near the place where the man fell. The body, dressed in the cushma, is laid on its back at full length, and covered with leaves, poles, and earth. Nothing is placed in the grave with the body. No marker is used, and no mound is heaped over the grave. The grave of a man killed by a

white slave hunter was pointed out to us. Before leaving the neighborhood we excavated the grave, but found no bones. The body had been removed, and the earth and poles replaced. This may be the custom. Again, among some branches, the small children are carried up into the hills and buried among the rocks, while all others are thrown into the river. They were unable to give any explanation for these exceptions to the general rule.

They have a tradition that a long time ago the body of a Mache-yenga was buried, and a guard kept watch to see if there was a soul, and if so what became of it. In the morning of the eighth day, they saw a red deer jump from the grave, and run into the forest. Since then they have believed that the souls of the Mache-yenga always enter the red deer (*Cervus humilis*). They do not know what becomes of the souls of other men, but they do not enter the red deer. They never eat the flesh of the deer, but have no objection to others doing so. They even kill it themselves, and give it to others to eat. It is in no way treated as a sacred animal. When the cooked flesh is offered to a Macheyenga, he makes signs as though the thought of eating it made him sick.

From the tradition it would seem that they believe the soul becomes a red deer, and that man lives again in the form of a deer. They did not see the soul enter the deer, but saw the deer rise from the grave. On this point they are quite clear. The man dies, and it makes no difference whether his body is buried or is thrown into the river, his soul enters the deer, and that is the end of all. Neither the soul nor the body ever lives again. It does not become the deer, neither is it the soul of the deer, for the deer has a soul of its own. Asked what becomes of the soul, an Indian answers, "It goes into maniro, the red deer." Asked what then becomes of it, he answers, "Nothing, that is the end of it when it enters the deer."

They have no conception of the origin of "seletci," the soul, or any very definite idea of what it is. It is something besides "isede," or life, that animals have in common with men, and that rocks and rivers do not have. It is never seen, and has nothing to do with life, sleep, disease, or death. It is an intangible something that leaves the body at death and enters the deer.

Religion. The Macheyenga believe in "Idioci," the big man, in "engita," the sky. He made man, the sun, the moon, etc., in some way, they know not how or when. At present he has very

little to do with the world, except to thunder at the beginning and the end of the seasons, and to send the rain. He takes no more care of men than of the animals. He does not reward the good or punish the evil, consequently he is neither adored nor propitiated. Their attitude toward him is much the same as his toward them, — one of indifference. They make no offerings or prayers, and have no ceremonies, feasts, sacred dances, ceremonial objects, charms, or fetishes. There is no communion between themselves and any spirit.

These Indians have very few superstitions, traditions, or stories. They pay some attention to the interpretation of dreams. Good dreams indicate good luck; a bad one is an omen that some friend will die soon. If a woman dreams her husband is hunting, she will be struck by a poisonous snake when she goes to gather wild cotton. If one sneezes, it is evidence that someone has inquired about him. Hair cuttings are thrown into the river; if they were thrown on the ground the people would become sick. Nail parings are thrown away anywhere.

They exchange many gifts when visiting. If, by accident, a man breaks something they give him, he drinks chicha until he is thoroughly drunk, as a sign of his humiliation.

Salutations. When friends meet on the trail, they salute by words only, "Aiiñowi," how are you, and ask from whence you came and your destination. When returning after a long absence, the same salutation is given. When a stranger visits a house all rise to receive him, and then all sit down together. When parting they say, "Nowaitaiita," good-bye. They always address each other in terms of relationship, as uncle and nephew, father-in-law and son-in-law.

Cosmogony. In the beginning, the earth was very much as it is now. Idioci, the big man in the sky, made man, the sun, moon, stars, day, night, etc. No one knows why it is night, or where the sun goes at night. The earth is a round flat plane, and turns around contrary-clockwise. Round, like the earth, is "kabogitate"; round, like an orange, is "kanaronkate"; and round, like a log is "kanarongipoate." Thus, there is no question that the earth is flat. Eclipses and the phases of the moon are not understood. All these things are just as Idioci made them, and nobody knows why they are so.

Long periods of time are counted by seasons, the wet and the dry, and by the return of the fruits and flowers. When a visit is planned or an engagement made, the time is fixed by the blooming of a certain flower. Shorter periods are counted by moons. There are twelve moons in a year, and the period is called "mamperokesire:" "mampero," twelve, and "kesiri," moon. The word for a seasonal year is "sethehagarene." The quarters of the moon are used for counting time also. The new moon is "teisipekikeni"; the half moon, "teisimokeneki"; the full moon, "teilita"; and the dark of the moon, "pege." The position of the sun is used to determine the time of day, and in keeping appointments. The stars are not used for direction when traveling at night, because the traveler follows the rivers.

Measures. In measuring cotton cloth they use the large span, thumb to little finger tip, called "serantapaca"; for half a span they guess at it or use the width of the four fingers. They also use the small span, thumb and index finger tip, called "pateroseragodie." In building a house they cut a pole the proper length to measure the posts and another for the distance apart, or use a string for a measure. They keep nothing as a standard measure. To measure a longer distance they pace it. The distance between two villages or places far apart, is indicated by pointing to the position of the sun for each place or the time required to go there, — a very satisfactory method.

Marriage. The Macheyenga marry within the tribe, but outside their own group. Monogamy is the rule, but any man may have as many wives as he can support. The head man usually has three or four wives who all live in the same house; but each wife has her own fireplace, cooking utensils, floor space, and sleeping mat. The husband eats alone, each wife furnishing her part of the food, and after he has concluded, each wife with her children retires to her own quarters. There is good feeling and perfect harmony, which reveals itself at every meal in the exchange of choice bits of food.

Wives are always treated with great consideration and affection. It is so seldom that either husband or wife is unfaithful, that there is no established regulation for such an offense, and no divorce. Wives may be exchanged, but always with their consent. A few weeks before our visit Pegima and Kobana exchanged wives.

Kobana and his wife, who was very homely and eight months enceinte, lived on the Maturiata River where they had a good house, and a large chacara of growing corn, cassava, and plantains. Pegima, with his good-looking young wife, came from their home on the Javero River to visit Kobana, who was an intimate friend. A mutual admiration sprang up between Kobana and Pegima's wife, and an exchange of wives was arranged. Pegima took possession of the Maturiata home while Kobana went with his new wife to her people. The friendship of the two families continued, and frequent visits were exchanged. In due course of time a son was born to the wife of Pegima, and he appeared as proud as any father.

To the observer there seems to be very little in the way of a marriage ceremony. Marriage is not obligatory, yet public opinion is so strong in its favor that few remain single. A young man of eighteen selects the girl he wishes to marry and makes a proposal to her. If she accepts his offer, he goes away and makes a clearing in the forest, plants his field with corn, cassava, and plantains, and builds himself a house near his own people. After eight or ten months, when his field is ready to furnish food, the young man returns for his bride, but he must now ask for her in accordance with the ancient custom. He seeks the curaca, and tells him that he wishes to marry a certain girl. The curaca agrees to see the girl's father, and arrange matters if possible. The father asks the girl, and she replies that she does not wish to marry the young man. The curaca then returns to the boy and tells him that the girl seems unfavorable, but at the same time urges him to try other methods. The boy is sad, and pleads with the curaca to know what can be done. The curaca tells him to gather wood, build a fire, and to throw some sticks of firewood in front of her father's house. "If she changes her mind and decides to accept you," he says, "she will take a stick of wood and throw it into your fire." The boy does as directed, and then sits down in front of his fire, sad but hopeful. Men are sitting about talking, but no one speaks to him. The girl sits talking with some old women, occasionally glancing over her shoulder at the boy. In a short time she suddenly jumps up, grasps a stick of wood, throws it into his fire, and runs away. The boy, attempting to catch the girl, follows her into the forest, where the marriage is consummated.

The boy returns with his bride, holding her left wrist in his right hand. As soon as they appear, the whole throng begins making an awful noise with drums, singing and dancing. The men catch hands and dance in a circle with the boy. The women bring chicha to drink; the feasting, drinking, and dancing continue for three days, after which the new couple take up their abode in their own home.

It is the custom also for the bride and groom to exchange presents. Immediately after the return from the forest, the bride gives the groom a new cotton cushma which she has made by spinning and weaving wild cotton. The groom presents the bride with necklaces and bracelets. No present or payment is given to the bride's father or mother.

Widows soon remarry and indeed if they are left with children, it is necessary, in order to take care of the family. We observed an interesting case in point. Shameti, who had a wife and five children, went on a journey where he was obliged to cross some dangerous rivers. It was reported that he had been lost, but he returned in a week, to find his wife married to another man and two of his children given away. He took possession of his home and wife, but not of the two children.

Childbirth. Women appear to suffer little in parturition. On the morning of March 15, 1908, the wife of Pegima gave birth to her first child, a boy. Two families were living together in a long house on the Maturiata River near our camp. Early in the morning the men went to the hills across the river, hunting. At about ten o'clock, the woman about to be confined went into the clearing a short distance from the house, threw some banana leaves on the ground, and there, alone, gave birth to the child. She called to the woman at the house, who brought warm water to wash the baby; but before doing so they scraped it all over with a piece of split bamboo. The umbilical cord was tied twice on the side of the mother and once on the side of the child, then it was cut with the split bamboo knife. The cord was not touched with the hands, but held between pieces of bamboo. The placenta was buried near by. In about an hour after leaving the house the mother returned, wrapped the baby in a cloth, deposited it in a comfortable position on a mat on the earth floor, went into the river for a bath, then built a fire, and prepared the noonday meal as usual.

As this was the woman for whom Pegima had traded a month before, we were anxious to know how he would appreciate the boy, and were pleased when he acted just as any father would who was taken by surprise; his face spread in a bland smile as he inspected the youngster, but he said nothing. They apparently had been awaiting this event before moving away. Three days afterwards, the mother carrying a heavy pack walked five or six miles over the mountain to their new home. The child, being too light a load for its mother, was carried by a little girl of ten or twelve years.

● **The Family.** Families average four or five children, and sometimes six or eight are found in one family. Some do not desire children, and do not have them. It is said they produce abortion in some way, but we were unable to learn the process. Children are nursed for two or three years on account of the lack of other suitable food for them.

The labor of the household is well and equably divided. The men clear the field, not in common, but each in turn assists his neighbor. A visitor who happens along at such a time lends a hand at the clearing. The women with chonta palm digging sticks make up the hills, plant the crop, and tend it. When the corn is ripe, they pluck the ears, and store them. The men do the hunting and fishing, make their bows and arrows, dig out their canoes, and build their houses. The women take complete care of the small children; carry the vegetables from the field, and cook the food; collect the wild cotton, spin, weave, and make it into garments; and chew the cassava to make chicha. On the trail the women carry the heavy loads, and allow the men to hunt as they go. In the canoe, the man paddles, and the woman steers. They are good traveling companions.

The Macheyenga appear to live to an old age; we saw several with some white hairs. There were more old men than old women, which would indicate that for some unknown reason the men live longer than the women. The aged are well cared for, and respected by their children.

Physical Development. The Macheyenga are physically well developed, are of medium size, and have good health. Their constant food supply insures good nourishment and contentment. They are happy, good natured, and affectionate. They are about

the usual stature of the Arawakan people of the Amazon, and have shorter arms and broader shoulders than their neighbors. Their faces are slightly longer and less prognathous as determined by the auricular-nasion-prosthion index.

Their eyes are always black and straight, but distinctly wider apart than their neighbors. Their noses are usually quite flat and straight, never aquiline. Their lips are thin and straight, and their chins round and short. Their hair is black, coarse, and straight, and is worn down over their ears and neck for protection against flies. The women sometimes wear the hair over the shoulders. The men wear a band with short feathers attached to keep the hair away from the face. All go bareheaded. The men pull out

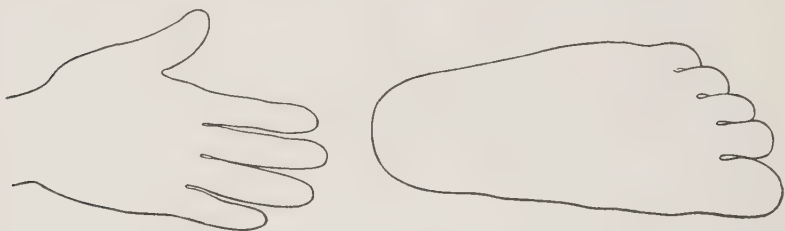


FIGURE 2

Outlines of hand and foot of Macheyenga Indian

what few hairs grow on the face. Their feet are broad and toes short, with the great toe set off a little from the second. The toes are used for grasping objects, especially for holding the arrowshaft while attaching the foreshaft and feathers (figure 2).

Deformation. Deformities of any sort are very rare. The only one observed was a boy near Azupizu, who had no toes on one foot, lacked two fingers on the right hand, and three on the left. Artificial deformation is practiced on all children. The heads of both sexes are deformed in youth by binding a board behind the head and a roll of cotton over the forehead, thus making a groove into which the tump-line fits. It is not meant to be a matter of beauty, but one of utility. The deformation, while not very great, could be felt distinctly, and served its purpose well.

The men are good canoemen, and can pole along all day without resting. On a long journey both men and women carry fifty to seventy pounds, fifteen miles a day. They carry with the aid of

a tump-line, which they pull down on with both hands between the head and the shoulders. All are good swimmers, and keep their bodies in good condition by bathing twice a day. For statistical measurements and comparisons see tables elsewhere.

Language. The following linguistic material is submitted to students who are to follow the study of the Macheyenga language, in the hope that it may prove of service for comparative purposes. My authority, Simasiri, and I were handicapped in our work by being compelled to use, as an intermediary, a language foreign to both of us. It was impossible to get valuable text because there is no set ritualistic or ceremonial forms, or extended songs with words. Making up stories for the occasion was not very successful. This lack of text for comparison makes it dangerous to perfect the conjugations and to build up a grammar; therefore, the conjugations are given just as written at the time. Any attempt to make the endings conform to a type would lead to future confusion. The material is of more value in this imperfect form. The following observations may prove suggestive.

True incorporation does not occur in the Macheyenga language. The nominal subject is placed before the verb and the object after it. The verbal stem, however, may be prefixed by the subjective pronoun, and postfixed by other elements and the objective pronoun, as for example: *n-amana-tapla-nipi*, I pray for you. There is thus an agglutination between the personal pronoun and the verb, and the same takes place between the possessives and their nouns. These elements do not stand alone and may require the presence of another pronoun to strengthen them, as: *naro n-am-bata-ke-ri*, I cured him. It is often necessary to designate the gender by an affix of the sign to the verbal stem, as: *pi-m-pe-ri-sabari*, he gives you the machete.

The possessive prefixes are: *n-nu*, my; *p-pi*, your; *i*, his; and *o*, hers. The first two, *n* and *p*, are common in all Arawakan languages. In some cases the Macheyenga suffix the possessives. The plural possessives are formed by means of a special affix. The pronominal prefixes are: *n-nu*, I; *p-pi*, you; *i-is*, he; *o*, she; *a*, we; *pi*, you; *i*, they, *m.*¹ and *o*, they, *f.*² Many of these are the same as the possessives. Before vowels, *n* is used, and before consonants, *nu*. *I* and *o* are more than pronouns, they indicate gender

¹ Masculine.

² Feminine.

as well. The *i* appears to be derived from *iri*, male. *Ri*, *ro*, or *ru*, used as prefixes or suffixes, indicate the gender of the person speaking. *Ni* is a pluralizing nominal suffix, as: *primare*, some person; *primareni*, some persons.

Interrogatives either begin or end with *ta*, as: *Tatakanika*, what did he say? *Tsaniyonta*, what man is this? *Itapipatcita*, what is your name? The *i* here indicates the masculine gender.

The particles *tsa* and *be*, found with many interrogative expressions, are used for emphasis only; *tsa* with the masculine, and *be* with the feminine gender.

Ka and *tei* are of very common occurrence and of varied meanings. *Tei* seems to be used as a suffix to general statements, while *ka*, *ke*, or *ki*, is used as a verbal suffix with the past participial: *ninta*, to love; *ni-ka-ninta*, I am loved; *ka-nioto-yeri*, to have known. *Ka* is used also in the sense of having or being, as: *ni-ka-tavi*, I am sick; *ni-ka-pitonea*, I have a son. *Ki* is used also with the ablative of instrument, *i-waka-ri-intcata-ki*, he struck it with a club.

Ma is a negative prefix, as: *ma-pihmaro*, a widow or without a husband; *ma-yampi*, deaf; *ni-ma-rotei*, I do not drink. *Kari* is sometimes used as an affix for negation. *Mba*, or *mpa*, is a suffix denoting future time: *katanawakina-mba-ka*, he will come soon.

The Macheyenga language is smooth and musical, lacking entirely the strong gutturals of the Andes languages. Men and women speak the same language, differing only in the endings due to difference in gender.

KEY TO PHONETIC SYSTEM

a as in *father*

ă " *hat*

e " *fete*

ě " *met*

i " *pique*

ĩ " *pin*

o " *note*

ö " *not*

u " *rule*

ũ " *but*

ai as in *aisle*

au " *how*

oi " *oil*

e " *ship*

tc " *chain*

hw " *when*

kw " *quake*

ñ " *cañon*

a'a, *i'i*, as broken vowels

a i, *a u*, *o i*, as individual sounds

Grammar. Conjugation of the following sixteen verbs: be, speak, give, know, live, die, see, hear, eat, sing, go, bring, make, paint, fall, and have.

TO BE, MIRITCI

| <i>Singular</i> | <i>Plural</i> | <i>Singular</i> | <i>Plural</i> |
|--------------------|---------------|---------------------|-------------------|
| PRESENT | | IMPERFECT TENSE | |
| 1 naro | haroegi | 1 iriati | aiigaki |
| 2 viro | virotoegi | 2 ati | iriaigeri |
| 3 yoga | ithiro | 3 iriatakera | iriataigakera |
| PAST | | CONDITIONAL | |
| 1 noati | aitaiigakeri | 1 kanonarida | kanoigakithitha |
| 2 piatheti | piaiganai | 2 kanoigaira | ikanoigathitha |
| 3 iataki | aiiganai | 3 ithithorakari | ithiroegi |
| FUTURE | | PRESENT SUBJUNCTIVE | |
| 1 kanotakana | kanoigakerira | 1 nokanota | kanotaigakeri |
| 2 virokanolitha | kanotaigairi | 2 pikanotari | kanotaiganaiitha |
| 3 inkannoti | inkanoigaki | 3 inkannotaki | inkannotaiigakeri |
| PRESENT PARTICIPLE | | PAST PARTICIPLE | |
| kanotaki | | kanoti | |

TO SPEAK, INIFITHA

| <i>Singular</i> | <i>Plural</i> | <i>Singular</i> | <i>Plural</i> |
|------------------|----------------|-----------------------|---------------------|
| PRESENT | | CONDITIONAL | |
| 1 noniaki | niagaki | 1 narononiera | niihaiigaki |
| 2 piniaki | tsaminiaki | 2 pinianoniera | pinihaiigakeni |
| 3 piropinini | iniaki | 3 ithithoiriniaki | iribihaiiganakenira |
| IMPERFECT | | PRESENT PERFECT | |
| 1 ibiabaiyeti | niabaiyai | 1 noniaki | inaiitaki |
| 2 piniabaiyetaii | piniabaiyetaii | 2 piniaki | aigomepiniaki |
| 3 iniabaiyeti | inihaiigi | 3 iniaki | iniaganaki |
| PAST | | PLUPERFECT | |
| 1 nonitai | niiagira | 1 ikanotakainiakera | irotioiniatakera |
| 2 pinihaki | piniagira | 2 ariopiniakeratio | irotiopiniakera |
| 3 iniaki | iniantaro | 3 irotioiniakera | irotioiniaigakera |
| FUTURE | | PAST PERFECT | |
| 1 noniakita | niniagakera | 1 aliomepiniaki | aliomagotaiigakeri |
| 2 piniira | niiageri | 2 aliomepiniaganakeri | aliomapingantaki |
| 3 ithiniakera | iginiaganara | 3 botaganteroti | aliomairiotaiigaki |

| <i>Singular</i> | <i>Plural</i> | <i>Singular</i> | <i>Plural</i> |
|---------------------|-------------------------|---------------------|---------------|
| FUTURE PERFECT | | PRESENT SUBJUNCTIVE | |
| 1 irinianakemi | niiaiiiganakemera | 1 nonihi | nihayaietaigi |
| 2 pinianakemi | niiaiiigaki | 2 pinihi | nihayaietaigi |
| 3 inianakeratio | iniiaiiiganakyeng | 3 piniakini | inihira |
| CONDITIONAL PERFECT | | IMPERATIVE | |
| 1 iniainakerakati | niiaiiiganakerikatha | | nihye |
| 2 pinianakerikara | pinaiiiganakerithikatha | | |
| 3 iniakerika | iniantanaki | | |
| PRESENT PARTICIPLE | | PAST PARTICIPLE | |
| noagantci | | niake | |

TO GIVE, EPAKA

| <i>Singular</i> | <i>Plural</i> | <i>Singular</i> | <i>Plural</i> |
|-----------------------|---------------|---------------------|----------------|
| PRESENT | | CONDITIONAL | |
| 1 nomperi | paiyeri | 1 ipithithika | paiigaiithi |
| 2 pipakeri | pimpaigakeri | 2 pipakrthirika | pikavinsaiithi |
| 3 ipaki | ipiri | 3 ipaiithi | tepinsani |
| 3f iripakimpe | opaiyithi | | |
| IMPERFECT | | PRESENT PERFECT | |
| 1 aipa | paiigithithi | 1 ipakeri | napaiigakeri |
| 2 pipakeri | paiigithi | 2 pipakeri | pipakethikia |
| 3 ipakeri | pavaigithi | 3 ipaki | ipingkani |
| PAST | | PLUPERFECT | |
| 1 kanti | paiyiti | 1 timaki | ipakena |
| 2 pikantaki | ipagani | 2 tipaiigaiithi | ipaiigy |
| 3 pinevitakeri | ipimanteri | 3 ipana | ipingkana |
| 3f pimpi | pairopiinonti | | |
| FUTURE | | PRESENT SUBJUNCTIVE | |
| 1 nompatceri | paigaiithitha | 1 pe | paiigakeri |
| 2 perinitcio | pasanoniyeri | 2 pedi | pediegi |
| 3 impatcerithirakathi | aipaiethi | 3 paka | pedi |
| 3f ompaithiroro | ompatcimpira | | |
| PRESENT PARTICIPLE | | PAST PARTICIPLE | |
| ipwankani | | ipagani | |

TO KNOW, Igoti

| <i>Singular</i> | <i>Plural</i> | <i>Singular</i> | <i>Plural</i> |
|-----------------|---------------|-----------------|---------------|
| PRESENT | | IMPERFECT | |
| 1 nogoti | wotaiigi | 1 igoyeti | gobegaka |
| 2 pigoti | igoigi | 2 pigotai | goigithi |
| 3 igoti | igoting | 3 igotaii | igotabaki |

*Singular**Plural*

PAST

| | |
|----------------|------------------|
| 1 nogotaii | tcemakoigakeri |
| 2 pigotabaki | pitcemakoigakeri |
| 3 itcemakotaki | itcemakoigakeri |

FUTURE

| | |
|----------------|--------------|
| 1 nogotakera | nogotaiigeri |
| 2 pigoterakari | pigotaiigeri |
| 3 irigoteri | irigotaiigi |

CONDITIONAL

| | |
|---------------|--------------|
| 1 igoteriki | goigaiilika |
| 2 pigoteroki | pigotaiigaii |
| 3 igotakilika | igotaiiging |

PRESENT PARTICIPLE

gotaki

*Singular**Plural*

PRESENT PERFECT

| | |
|------------|--------------|
| 1 nogotaki | nogotaiigaki |
| 2 pigotaki | pigoigaki |
| 3 igotaki | igoigaki |

PLUPERFECT

| | |
|------------------|-----------------|
| 1 ikelmagotaki | kelmakoigaki |
| 2 pikelmakeratio | kelmakoigaivaii |
| 3 ikelmakotaki | ikelmakoigaki |

PRESENT SUBJUNCTIVE

| | |
|-------------|------------|
| 1 piotaki | gotaiigaki |
| 2 piateriki | pigoigi |
| 3 igotaki | gotaki |

PAST PARTICIPLE

goti

TO LIVE, ITIMIRA

*Singular**Plural*

PRESENT

| | |
|---------------|----------------|
| 1 notimira | alyotimaiiyera |
| 2 pitimira | pitimaiyera |
| 3 athio otimi | otimaiyera |

PAST

| | |
|----------------|--------------|
| 1 notimira | itimaïiti |
| 2 pitimi | pitimavetara |
| 3 alyothimatci | itimatcera |
| 3f | otimabetara |

*Singular**Plural*

FUTURE

| | |
|-----------------|---------------|
| 1 alynontimatci | timaigatcera |
| 2 pintimatcera | itimaiyera |
| 3 intimatcera | intimaiyera |
| 3f ontimatcera | ontimaitayera |

PRESENT PARTICIPLE

itimaitake

TO DIE, KAMAKI

*Singular**Plural*

PRESENT

| | |
|-------------|-----------------|
| 1 nokamaki | kamaiigaki |
| 2 pintamaki | pintamaiigakera |
| 3 ikamaki | ikamaiigi |

PAST

| | |
|--------------|--------------|
| 1 nokamanaki | kamaiigakera |
| 2 pikamakiti | pitamaiigaki |
| 3 kamaki | pogeriaka |

*Singular**Plural*

FUTURE

| | |
|-------------------|-----------------|
| 1 nokamaki | kamaiiganakera |
| 2 pintamakerakari | pintamaiigakera |
| 3 inkamanaki | inkamirakari |

PAST PARTICIPLE

ataki

TO SEE, INIAKA

| <i>Singular</i> | <i>Plural</i> | <i>Singular</i> | <i>Plural</i> |
|-------------------|-----------------------|---------------------|------------------------|
| PRESENT | | FUTURE | |
| 1 noniakeri | inaenganithitha | 1 nomiakeroa | niaigakerora |
| 2 viroripenaiithe | piniagakethitha | 2 nehero | pampagaigero |
| 3 ithithoenaiithe | iniaigakethitha | 3 iniakeroa | tsigakataembapegiakero |
| 3f yoniagantaka | oniakiti | 3f iniavakerorokari | tsigakataoniaigakero |
| PAST | | PRESENT PARTICIPLE | |
| 1 noniakethi | inaenkani | na'akero | |
| 2 viroripinakeri | viroeipinaigakeri | PAST PARTICIPLE | |
| 3 itheiroriineaki | ithiroriiniaigavakeri | | |
| 3f oniavitakari | irororoniaigavakeri | | |
| | | ogotaka | |

TO HEAR, PINTCEMISANTE

| <i>Singular</i> | <i>Plural</i> | <i>Singular</i> | <i>Plural</i> |
|--------------------|------------------|---------------------------|------------------------|
| PRESENT | | FUTURE | |
| 1 nontcemisantaki | tcemisantaiigi | 1 narotcemisangaiikitcini | tcemisantaiigakerira |
| 2 pintcemisantaki | pitcemidi | 2 pintcemarakari | tcemisantaiigeri |
| 3 pintcemaki | itcemisangakaii | 3 intcimakerakari | intcemisantaiigerakari |
| PAST | | PRESENT PARTICIPLE | |
| 1 notcemisangakeri | tcemisantaiigera | itcemisanteinkani | |
| 2 pitcemakeri | pitcemaigakeri | PAST PARTICIPLE | |
| 3 itcemisangakeri | itcemaigakeri | | |
| | | itcemegantaka | |

TO EAT, SIKATEMBA

| <i>Singular</i> | <i>Plural</i> | <i>Singular</i> | <i>Plural</i> |
|----------------------|-----------------------------|--------------------|-------------------|
| PRESENT | | FUTURE | |
| 1 yemba | isikataigatha | 1 nosigataiemba | sikataiigakembara |
| 2 isitakaiita | yogakero | 2 pisigatakembara | pogaiigakembari |
| 3 isitakataka | isikataiyemba | 3 isikatakembara | irogaiembari |
| 3f yowakasa | osikataiyemba | 3f isikatapaiemba | ogaigakembari |
| 3n*gaiyogaso | isikataigaka | 3n isikatakarakari | |
| PAST | | PRESENT PARTICIPLE | |
| 1 nosikatemba | isikataiitatba | osikatakaingara | |
| 2 pisikataka | virolipisakatahigakaniroro | PAST PARTICIPLE | |
| 3 isigataka | ithilohegaisikataiigakaniro | | |
| 3f nakitisakatangtci | osigataiigapaka | | |
| 3n yogakathi | | yogarantaka | |

* Neuter

TO SING, MATIKI

| <i>Singular</i> | <i>Plural</i> | <i>Singular</i> | <i>Plural</i> |
|-----------------|------------------|--------------------|-----------------|
| PRESENT | | FUTURE | |
| 1 nomatigaki | matekaiigakakeri | 1 nomatikai | marentaiigakera |
| 2 pimatiki | pimatikaiigera | 2 pimatikaiera | pirantaiigi |
| 3 marenti | imatikaiigi | 3 embirantagegeti | imarentarigera |
| PAST | | PRESENT PARTICIPLE | |
| 1 nomatiki | imatikaiithira | maritagqntci | |
| 2 pimatiki | pimatikaiigakera | PAST PARTICIPLE | |
| 3 imatikerora | ipirantaiigi | omarintinkani | |

TO GO, ATAKE

| <i>Singular</i> | <i>Plural</i> | <i>Singular</i> | <i>Plural</i> |
|-----------------|---------------|--------------------|---------------|
| PRESENT | | FUTURE | |
| 1 ninati | tsami | 1 ninati | aiigakera |
| 2 piataki | piagaki | 2 pietaki | p'aiigaki |
| 3 iriataki | iriyu | 3f aliooaigaki | ariooaigaki |
| 3f kiawata | owaigaki | PRESENT PARTICIPLE | |
| PAST | | ataiunaike | |
| 1 atai | aiigerti | PAST PARTICIPLE | |
| 2 piateti | aiigaibi | niuateti | |
| 3 iateti | aiigai | | |
| 3f oateti | oaiigai | | |

TO BRING, IRAMAKERA

| <i>Singular</i> | <i>Plural</i> | <i>Singular</i> | <i>Plural</i> |
|-----------------|----------------|--------------------|------------------|
| PRESENT | | FUTURE | |
| 1 mamakero | maiiganakero | 1 namakeri | maiiganakerira |
| 2 pamakero | maiiganirori | 2 pamanakirorakari | nompaiigakemperi |
| 3 yamakero | amakenkani | 3 iramakerakari | iramaiigakero |
| PAST | | PRESENT PARTICIPLE | |
| 1 naromakero | aminkanerira | amanaka | |
| 2 pamakeri | pamaiigakerira | PAST PARTICIPLE | |
| 3 yamakeri | yamaiigakeri | matcero | |

TO MAKE, PANTAKI

| <i>Singular</i> | <i>Plural</i> | <i>Singular</i> | <i>Plural</i> |
|-----------------|----------------------|---------------------------------------|-----------------|
| PRESENT | | FUTURE | |
| 1 tatapantaki | kaiyakera | 1 nobetsike | aatsamitayero |
| 2 pantakera | betcikaiice | 2 tiro | pantakeri |
| 3 betcike | yantaiyaceri | 3 virobetsikangitcini | kanteriiyantake |
| 3f antake | antaiyatceri | 3f virotakeroni | antaigakero |
| PAST | | PRESENT PARTICIPLE | |
| 1 yanti | obetsikanganiera | taiiyi | |
| 2 yotiyantia | pobetsikaigakera | PAST PARTICIPLE betsikangitcaritha | |
| 3 yobetsigatere | yobetsikaigatcaritha | | |
| 3f | antaigatcaritha | | |

TO PAINT, PITSOTEMBA

| <i>Singular</i> | <i>Plural</i> | <i>Singular</i> | <i>Plural</i> |
|------------------------|-------------------|-------------------------------|-----------------|
| PRESENT | | FUTURE | |
| 1 nopotsotaka | potsoyemba | 1 yoyetsapa, otsapa | nosangyenatembu |
| 2 pipotsotaka | sangenari | 2 viropimpotsotacemba | sangyenataka |
| 3 ipotsotaka | tciringemba | 3 paiiroipotsota | potsoyemba |
| 3f opotsotaka | alyoikanta | 3f kopotsotembabiro | opotsoigaka |
| PAST | | PRESENT PARTICIPLE | |
| 1 tiweyithi | harohayipotsoegha | sangyinataka | |
| 2 vitcapotsotatangitca | konogarli | PAST PARTICIPLE kantatgaka | |
| 3 tiarikaipotsotatcita | ikanoyero | | |
| 3f tiaagatcero | kirasamatatci | | |

To paint a cushma, nopotsokatcarnoyitsagari

TO FALL, CIRIANAKA

| <i>Singular</i> | <i>Plural</i> | <i>Singular</i> | <i>Plural</i> |
|-------------------|------------------|----------------------------|-------------------|
| PRESENT | | FUTURE | |
| 1 nacirianaka | siriaiiganaki | 1 naroncongoinakeri | ciriaigaka |
| 2 paciriaki | ponkaraki | 2 picongoiganakerakari | paciriaiganakeri |
| 3 yacirianaki | iraciriaiigi | 3 iricongakonakeri | iraciriaiganakeri |
| PAST | | PRESENT PARTICIPLE | |
| 1 naronacirianaka | ciriakoiganakero | cirianaki | |
| 2 paronacirianaka | congokoiganakero | PAST PARTICIPLE ciriaka | |
| 3 yaciriaigaka | iricongakoianaki | | |

TO HAVE, TIMAKI

| <i>Singular</i> | <i>Plural</i> | <i>Singular</i> | <i>Plural</i> |
|-----------------|-------------------|------------------------------------|--------------------|
| PRESENT | | FUTURE | |
| 1 aiitiomaci | timakitaricigi | 1 otemakera | timaiigaiiro |
| 2 aiitiopaci | pacintaiiga | 2 pintemarakari | pacintaiigaembari |
| 3 aiitioraci | yacintang | 3 intimai | iracintaiigaembari |
| PAST | | PRESENT PARTICIPLE | |
| 1 nacintaveta | tcintahigarira | cintatcariga | |
| 2 pacintaveta | pinaigavitahati | PAST PARTICIPLE yacintavetakari | |
| 3 otimavetaka | pinaigavitahatita | | |

INDEFINITE ADJECTIVE PRONOUNS

| | | | |
|---------------------|------------|------------------|--------------|
| Something | iroro | Every, <i>f.</i> | magatirotciä |
| Some, <i>m.</i> | ithirotio | All, <i>m.</i> | maganirotcia |
| Some, <i>f.</i> | irorotio | All, <i>f.</i> | magainiro |
| Some, <i>m. pl.</i> | ithiroeyi | Both | piteonatcia |
| Some, <i>f. pl.</i> | iroroeitio | Each | pañero |
| Nobody | ataii | Each one | pañiinatci |
| Nothing | mameri | Other | pacini |
| Much | paitimi | Another | irapiteni |
| Little | traintimi | Such | iroro, tiara |
| Every, <i>m.</i> | magañiro | Thing | oga |

USE OF ADJECTIVE PRONOUNS

| | |
|---|--|
| Did you find something? | pametaka? |
| Some day | ontowaiiganaki |
| Are there any grapes? Yes, there are some | aiitio sinquabotcaditcite? hähhä, aiitio |
| I do not see anything | teranone |
| No house | tatakunanonaki |
| I have no time | nantowaiitaki |
| Many years | towaiiti sithiagathini |
| I have little corn | tesanoontiminosintcine |
| All the men | maganiro siredi |
| The same day | iroro queitayiteri |
| Both hands | pitatiroidrako |
| Each time | ikantani |
| The other day | oketorira |
| Such a boy | tia ikantaka isanämpira |
| Anything | pantemaka |
| Something else | iropacini |
| The same thing | kañovitha |

USE OF ADJECTIVES

| | | | |
|---------------|----------------------------|-------------|------------|
| A large house | patiropankotci omarañi | Bad coffee | terakamati |
| A good man | panirosiradipairoikametiti | Good coffee | kamatini |
| Another man | imaranisiradi | | |

DEMONSTRATIVE ADJECTIVES

| | | | |
|-----------------|---------|-------------------------|----------|
| This, <i>m.</i> | ithitho | That (remote) <i>m.</i> | yonta |
| This, <i>f.</i> | iroro | That (remote) <i>f.</i> | onta |
| That, <i>m.</i> | yora | These, <i>m.</i> | ithiroyi |
| That, <i>f.</i> | oka | These, <i>f.</i> | ithiroka |

POSSESSIVE ADJECTIVES

| | | | |
|-------|--------|------------|----------------|
| My | naci | My house | nacinopankotci |
| Your | iraci | His house | pacipipankotci |
| His | pacipi | Our houses | siyegipankotci |
| Our | siyegi | Our wine | siyegitomiyegi |
| Your | siyegi | Our dogs | siyegiotciti |
| Their | siyegi | Our hands | siyegikoegi |

COMPARISON

| | |
|-----------------------------------|---------------------|
| Good | kametini |
| Better | kāmetitaki |
| Best | ithirokametini |
| Bad | terakameti |
| Worse | terakameti |
| Worst | terakameti |
| Rich | payesintaranti |
| Richer | payesintaranti |
| Richest | payesintaranti |
| Sweet | potcati |
| Sweeter | piropotcati |
| Sweetest | piropotcati |
| Sour | okateuti |
| Sourer | pirokateuti |
| Much | towaini |
| More | pacini |
| Most | pacini |
| Little | mañiti |
| Less | otcariati |
| Least | otcariati |
| As many as | paitimi kañutaka |
| That tree is taller than this one | omarapayi itcasimpo |

| | |
|------------------------------------|---|
| That house is higher than this one | ontapänkotci purotioka |
| The most beautiful flower | otegapari okametiti |
| The tallest and oldest tree | intcato oga tcantcani |
| Manuel is taller than Domingo | Manuel paio omarañi Domingo |
| Manuel is older than Domingo | Manuel paio ikametiti Domingo |
| He is taller than you | ithiro tetcimotani paiironiviro |
| A horse is stronger than five men | iriropaiiro icicintciti paniro pintangciki ihiâle |
| As white as snow | oquitate tankanutaka cadaka |
| As much gold as silver | paitimi koli kañutaka koliki |
| As many turkeys as dogs | paitimi kanati kañutaka otciti |
| I have three beautiful dogs | naro aionotsititi maguani notcititi |
| The good and the evil | kamatini iriro terakameti |

USE OF ARTICLE

| | |
|-----------------------------|-------------------------------|
| A man | paniro siredi |
| A woman | patiro cinani |
| A house | patiro pankotci |
| A tree | patiro entcato |
| A dog | paniro otciti |
| A turkey | paniro panaii |
| The man | ithiro siredi |
| The woman | onti cinani |
| The tree | ithiro entcato |
| The orange is round | larangha iroro kanaronkati |
| The plate is round | mitaro iroro kabogitati |
| The world is round | kipateci iroro kabogitati |
| The pole is round | entcapoa iroro kanarongipoati |
| The man is tall | iroro siredi imarana |
| The man is sick | iroro siredi imansigataki |
| The tree is tall | oga intcato oga tsantsani |
| The small tree is green | oga intcato cavikani |
| The house is high | iroro pankotci karaki |
| The house is old | oga pankotci pankotci karaki |
| Round, like a globe or ball | kanaronketi |
| Round, like a plate | kabogitati |
| Round, like a cylinder | kanerongipoati |

PERSONAL PRONOUNS

| | | | |
|---------------|-----------|-----------------|-----------|
| I | naro | We, <i>f.</i> | viroyi |
| You | viro | You | viroyi |
| He | ithitho | They, <i>m.</i> | ithiroiyi |
| She | iroro | They, <i>f.</i> | iroroyi |
| We, <i>m.</i> | harinelyi | | |

USE OF PERSONAL PRONOUNS

| | |
|--|--|
| They love us | onintana |
| They do not love us | teraonintana |
| She is afraid of me | irovotionimpana |
| She is not afraid of me | iroroteraimpana |
| He gave you a turkey | tiabapagatcievi |
| He loves me | nintana |
| He loved me | nintero |
| I love her and fear her also | nathononintero pintimatcira |
| I saw you this morning | noniyatcämpiinkara |
| I saw your sister also | ithiraiyenonakeri |
| Is he homely? | ithirotelereikämetiti? |
| Yes, he is | ithirotathi |
| I wish to speak with him | noniakethitha |
| He gives it to me | ipahanaro |
| He is willing to work with you and with me but not with him | ininti ivitsamai itakero tcini intentaka viro intentaka |
| Give it to me | painaro |
| Give them to us | yimoretcı |
| He gives them to you | tsängite |
| He gives it to you | kantero yimotetci |
| He gives them to us | tsahangatetci |

RELATIVE PRONOUNS

| | | | |
|-------|---------|----------|-----------|
| Who | nebinte | All that | akaikanta |
| Which | tcini | What | tata |

USE OF INTERROGATIVE PRONOUNS

| | | | |
|--------------------------------|--|---------------------|-------------|
| What is that? | tatawitaoga? | How many are there? | akaokanta? |
| Who is calling? | tcinikaiimagitci? | What man is this? | tsaniyonta? |
| Whose is that beautiful house? | tcini sintaro ipanko tci paiiro kametiti? | What did he say? | tatakanika? |

ADVERBS

| | | | |
|-------|---------|-----------------|------------------|
| Here | aka | Easily | tera ongomitempa |
| There | anta | There (distant) | sitikani |
| Much | paitimi | | |

USE OF ADVERBS

| | |
|----------------------------|---------------|
| I am very comfortable here | namitaka aka |
| Sit here | pirinite aka |
| Sit there | pirinite anta |
| Two steps from here | tenara oka |

| | |
|------------------------------|------------------------|
| We shall all go there | tsame maganiro aiigaki |
| He works much (a great deal) | paiiro itsamaiti |
| I am very tired | paiiro nociropitaki |
| He is much esteemed | paiiro ikyiaki |
| It is now (already) late | ataka icunganaka |
| I understand now | notcemaki |

USE OF CONJUNCTIONS

and = i
or = impa
but = non

| | |
|-------------------------------------|--|
| Father and mother are sick | apa imantsigataka ina omancigatatci |
| Father and son are well | apa i tomi yoga ipothitabaiyeta |
| You and I are white | vironaro thera tsamampa |
| Five or six are good | piniropintangitci impa patirogangetce paiiro ikomeiteti |
| He says so but I do not believe it | ikanti tera non gematsateri |
| I am not going to Lima but to Cuzco | garanoatai non timatciriaka |
| Where are you going? | tiarapia taiviro? |
| Where does he come from? | tiaiponiaka? |
| I shall tell him when he comes | pinkanteri akalika ithipokaka |
| I have no friend but you | thirainiimi nonthentemparitha |
| One day when I was in Cuzco | patiro notimatciti koskoki |
| The man is sick | siradi imantcigatatce |
| Are you sick? | ariro pimmantcigatatce? |
| He always tells the truth | teanantana pintsavatacara |

USE OF PREPOSITIONS

| | |
|--------------------------|--------------------------------|
| This fish is for you | yokesima ithitho paci |
| I am leaving for Bongo | yokapantli onogakeri |
| He caught me by the hand | nagakeri nakoki |
| A spoon for the soup | patiro biciria iroro acikotari |
| A cushma of cotton | patiro kitsagarintcintci ampe |
| I cut my finger | nogarakanako |

INTERJECTIONS

| | | | |
|----|----|----|-----|
| Ah | ah | Oh | ehe |
|----|----|----|-----|

SALUTATIONS

| | | | |
|-----------------------|----------------|--------------------|---------------|
| How are you? | aiiñowi? | Good night | sayitetânai |
| Very well, thank you; | aiiñona | Good bye | nowaitaiita |
| and how are you? | viroriaiinowi? | What is your name? | tata pipeita? |
| Good day | ketayitetânai | | |

MISCELLANEOUS SENTENCES

| | |
|----------------------------------|------------------------------------|
| A good man is happy | yoga siredi kamatini idiataki |
| An old man is feeble | siredi ibisalitaga tenigaicingeste |
| A good house is dry | kametini pankotci tera ungatsoyi |
| An old house is wet | ogali pankotci katsoga sitake |
| A good bow is strong | okapi anuntci otängsigati |
| A good arrow is straight | patero tcakopi okatingati |
| A good wife is faithful | pihima kametini teilhitsa kotemba |
| Good and bad | kametiniempa terakameti |
| Neither good nor bad | unkametitemati kametini |
| A good husband loves his wife | yoga oimi ikenkiro ihina |
| I am cold | nokatcingataki |
| I am thirsty | nomirataki |
| It is true | alitsänotio |
| It is not true | pikankani |
| He is in my uncle's house | aiino pankoteita pikonkidi |
| He bought the bow from my cousin | nonebitaki iyunti ibiani |
| He found the child | aitio itomi |
| He has black hair | ocibokaki igici potcetari |
| It is hot | katciringakiteri |
| It is windy | atampiat |
| It is early | tcitikamini |
| Is it late? | atanai ianta? |
| I wish to speak with you | noninti noniania takempira |
| I am tired of walking | paiero nocigopitaki na naiitakera |
| There is nothing | menedi yitataki |
| Where is it? | aterekara? |
| Very tired | nocigopitaka |

HUNTING STORY

| | |
|---|---|
| Noaiigera nomagabi yetitera. | Nowataki noniaka komaikenaro. |
| <i>We went to hunt slept.</i> | <i>Being encountered monkeys.</i> |
| Nopatimakinakeri ariono kentinakeri peniro alionpa. | Noaiganaka |
| <i>I had persevered here and fished, one we secured.</i> | <i>To commence</i> |
| aiikeri ario noniaki pacini ocito nokentaki nogontiatiki | |
| <i>farther off there we found other monkeys and fish</i> | <i>thousands of</i> |
| otemakeraneri, nobetcikaki nobanko. | Okitaitetanaki naiiro |
| <i>where is water, there we made a shelter.</i> | <i>Another day (in the morning) and</i> |
| aiikiro nani nomata ariononianaki maiini nogaivitakeri, | |
| <i>another time to go beginning we have found a bear</i> | <i>and killed it,</i> |
| nokianakeri noungetaka oti makeraniateni ario nomaigaiigaki | |
| <i>carried it and left it where we have to sleep</i> | <i>where we had slept</i> |

nanaivaigeviti noniagaiigaki cintori mava. Nokientaki. Nopokai
yesterday we have found pigs three. I fished. We returned
 ipokaiigapi notentaritha igaiithinokiaki cintori icingotenkani
companions me and my we have brought pigs we have roasted
 cintori. Okitaitikanai osairiri nopigaiiga nokatataiki cinkoti
pigs. Tomorrow good day we return a third day roast pigs
 nokiaki nokantimaika aiigi, nopakaii nokiaki cintori itemati.
loaded let us now return, return loaded pigs very heavy.
 Arionamaganii nomaganakera nakera atangatci. Arioookaniutaka
There to sleep again where we slept first night voyage first day. Beautiful day
 teraonpaliyaenkani. Noponia nopitinitanai oticka noyiaigakeri
there was no rain. I went out my companions in great hope
 ipokopaii napicigopithiaiigaka. Nokavititanaha nogongetaka
they arrived refreshed. We must go again short distance to
 oniogantatha pankotci arioonopethinitanaki. Nokiani kigonkero
where was seen the house there rested. Then we have this
 nogaiithopankoteci arionoatheti. Oyaciati kontiriciati paitimaka
the shelter there had been. Where plenty game plenty
 päkeri paiiroitimi icingitaciegi paneronomanavitheti. Paiiro
turkeys plenty bears and some fish It
 osamanitinoatheti kametigitivayitaki.
is not far away beautiful place to live.

TRANSLATION

We went hunting and slept in the woods. We found some small monkeys. I went on here and caught one fish. We went on again a long distance where we found some large red monkeys, and thousands of fish in the river. Here we built a shelter. In the morning we started again and found a bear and killed it, and carried it back to the place where we slept the night before. We then encountered a drove of wild pigs and killed three. I caught some fish. We returned, I and my companions, brought the pigs and roasted them. In the morning, it being a good day, we started home with one-third of the roasted pigs. Our loads were very heavy. We spent the night where we slept the first day out. It was a beautiful day with no rain. My companions and I started out in good spirits and arrived with little fatigue. We had gone only a short distance when we rested at the house we had seen

before. Then we came to the shelter we had built. There was good hunting, plenty of turkeys, plenty of bears, and some fish. It is not far away and a beautiful place to live.

FISHING STORY

Ogaripacini noatiri Pairotoliti, nocimatira notentaikya
Once I lived in place Parontore, I caught fish with my brother

nokientaki nobbiogakeri yoyagakeri egyalseokeky ciateka
and fish plenty a pile carried on balsa well filled

nopokaiigai pankotciki yongotengkani nosikataiigapaha.
we ourselves well house (shelter) after to cook to eat.

Irrookoitaiikanaiike noatheti itimira apa noniatero ina
In the morning I was where my father my mother

nopaiiterora cima. Nopigaha nomangapa ithi acaningka
plenty caught fish. Next day we found arrived Macheyenga

yagatsonkiaiiigakera, ikantana "Tsamakiringakera."
those who never came, and to me said "Let us go below down river."

Ikogakotagantana ikantiakapikanta. Nokantitera nontovaiigye.
And me asked how many friends how many families. To him said I have no family.

Yogasipapa terainaheri apa nantiathatatcikingaki pitipaiyeno
I have father do not know where father I remained there four

ciriagakotheta gakotheta. Nokantiri nomatsinga tsami
years below. He said companions I am going

niaiigatethiraxapa ikantani impatciaiinopidi
already my country and my father going to be he no has family here, because he is

tiarapikantaka terapinkamantena nopoki. Cinmacitiki
going, and because no more advised has your father accompany. We have come

nagatsongiataii nokogavitapa riapamaneri. Arionotimapaii
in August there where my father not was there. This house where arrived

noetheti itemera ani noniapaieri nokanteri.
I was to me where brother-in-law I found lived there in his house.

Tirapigotai ina ani niananito "Ikantana
Not me knew frightened mother brother-in-law spoke to me, "Where have you come

arioviria ani tatapipokacti." Nokantipokahano.
you are my brother-in-law here something has brought." Me said, "I have returned."

Nokogokataganteri apa ani? Yogatitio apa, "taiiraitimaii
And asked, "Where is father?" He said above Parontore, and I said, "Where

kanti?" "Arioitimaogaciaki Parototi." "Yogapikongkidi,
is my uncle?" "My uncle and he is in Parontore." "And my aunt,

tiaroitsetaki?" Ikantana, "Arioitsataki Cimaki."
where is my aunt?" And to me he said, "She is in Cimaki."

Narononerokilinga nokonoitariacaingo. Aliokantakikeringaki
I had been below (down river) and know my country ruin. Thus I know below

noatikeringa naronaiirokamatike.
thus well know below I am able to inform you.

TRANSLATION

One time where I lived in Parontore I went fishing with my brother. We caught a great many, and put them on a balsa in a great heap. We built a shelter for ourselves and then cooked some fish to eat. The next morning I went to where my father and mother used to catch many fish. The next day some unfriendly Macheyenga arrived and said to me, "Let us go down the river." They asked me how many friends I had there, and how many in family. I told them, I had no family there, that I had a father, but did not know where he was. I remained below for four years. My companions said to me that they were now going to the country where my father was living alone temporarily. Therefore they advised me to accompany them to my father. In August we came to the place where my father had been but he was not there. We went to a house and I found that my brother-in-law lived there. He did not know me. He was frightened and said to me, "Why have you come? You are my brother-in-law, something has brought you here." I said, "I have returned. Where is my father?" He said, "Above Parontore." I said, "Where is my uncle?" "He is in Parontore." "And my aunt, where is she?" And he said to me, "She is in Cimaki."

I have been down the river, and I know how my country has been ruined. In this way I know the lower country, and know it well and am able to guide you.

EXPLANATION OF THE FISHING STORY

Simasiri, the author of the above, was brought up as a boy on the upper branches of the Urubamba River where there were thirty or forty scattered families living in freedom. Lower down the Urubamba, the rubber gatherers needed laborers and hired neighboring Macheyenga to go with them to the upper country

to capture Indians for slaves. Everyone of Simasiri's family was either killed or captured and sold down river. Simasiri was first taken down river about one hundred miles, and kept there three or four years. His owner then took him to Cuzco, and after five years, when he had learned Spanish, took him back to his old country to act as an interpreter among his own people. The fishing trip, he here gives an account of, was undertaken to learn what he could of the fate of his relatives. His father and mother were dead, his uncle and aunt were separated, his sister lost sight of entirely, and his cousins scattered in many directions or killed. One was cut open by a white man and his kidney-fat used to make candles. Small wonder that Simasiri soon deserted the Whites, and took up his abode among the wild Indians of the forest.

Vocabulary.

THE FAMILY

| | | | |
|-------------|--------------|------------------|---------------|
| Family | towaidi | Son | pitomi |
| Man | siradi | Daughter | pisinto |
| Woman | cinani | Child, <i>m.</i> | ikaberanantci |
| Husband | pihina | Child, <i>f.</i> | ikantaroti |
| Wife | nueña | Boy | tcilipiki |
| Grandfather | pikonkiri | Girl | itumieni |
| Grandmother | payiro | Infant | sieni |
| Father | apa | Grandson | tcaunka |
| Mother | ina (pinero) | Granddaughter | tcainka |
| Uncle | notirili | Nephew | naniro |
| Aunt | nutcaringi | Niece | itcaria |
| Brother | iña | Cousin | numatcienga |
| Sister | intco | | |

PARTS OF THE BODY

| | | | |
|----------|--------------|----------|------------|
| Body | nosinaganti | Eyelash | weceptaha |
| Flesh | ibati | Ear | nayempita |
| Skin | misina | Nose | nogirimasi |
| Skeleton | itongki | Mouth | nowiganti |
| Skull | neyitota | Lips | notcera |
| Head | noyito | Teeth | nai |
| Hair | neyisi | Tongue | noñini |
| Face | nogoro | Neck | notcäno |
| Beard | nosipätona | Shoulder | nosiondi |
| Eye | noki | Back | notisla |
| Eyebrow | nosimpiesoki | Side | nomersta |

| | | | |
|--------------|---------------|--------------|--------------|
| Chest | noneya | Leg | nobodi |
| Abdomen | nämporetca | Knee | noyerto |
| Arm | nonaro | Ankle | nowinkiki |
| Elbow | nokioki | Foot | nuyiti |
| Wrist | nuyerstoki | Sole of foot | nogunta |
| Hand | näko | Toe | notcäpiyeti |
| Right hand | quatingati | Toe nail | notonayiti |
| Left hand | ilämpati | Heart | näniäki |
| Palm | nusiräutapako | Pulse | isita |
| Finger | nutcäpako | Stomach | nomotia |
| Nail | nuciäta | Lungs | itista |
| Thumb | tciripektea | Breath | naniengataki |
| Index finger | nonkutaki | Soul | camatcirniga |

ANIMALS

| | | | |
|----------------------|-----------------------|-------------------|------------|
| Animal | posanteri | Fly (black) | sikidi |
| Monkey (small) | komaikinaro | Mosquito | siyito |
| Monkey (large black) | maikasapa | Butterfly (large) | patcäntero |
| Jaguar | mainiti | Butterfly | pempero |
| Puma | maitsonsore | Grub | kenitci |
| Dog | otciti | Ant | katitori |
| Cat | mitci | Ant (large black) | mani |
| Tapir | kemari | Snake (poisonous) | yatcikanti |
| Wangana | pageri | Anaconda | malanki |
| Hog (wild) | cintori | Fish | sima |
| Deer | maniro | Snail | tcai |
| Bear | maiini, icingitaciegi | Toad | masero |
| Ronsoco | ipati | | |

BIRDS

| | | | |
|--------|---------|------------|------------|
| Bird | tcimädi | Partridge | kinsoli |
| Parrot | kintaro | Poweel | tsämidi |
| Duck | päntio | Woodpecker | kukaskondi |
| Turkey | kanari | Macaw | megantoni |
| Dove | imoti | | |

PLANTS

| | | | |
|----------|----------|------------|----------------|
| Corn | sinki | Papaya | tinti |
| Potato | maguni | Palta | tcivi |
| Yucca | sekätei | Massasamba | yairipeni |
| Cane | impogo | Coca | koka |
| Tobacco | sedì | Cacao | sariyamenaki |
| Orange | naraha | Vanilla | simasidiawanti |
| Lemon | ilimoki | Achote | apigiri |
| Plantain | palyanti | Forest | kovasidi |

| | | | |
|------------|----------|--------|----------------|
| Tree | entcato | Flower | otega |
| Tree trunk | entcapoa | Fruit | okitoki |
| Balsa wood | tsaiyi | Root | ositsa |
| Branch | oci | Seed | okitsoki |
| Leaf | otsago | Grass | tcipanasi |
| Fronde | tcipani | Cotton | okitoki empeye |

SPINNING AND WEAVING

| | | | |
|-------------|---------------|---------------|----------------|
| Loom | tatero | Thread | ibiritza |
| To weave | amarintci | Spindle whorl | kirikänentonsi |
| Woven cloth | tagompirontci | Cotton | empeye |
| Warp | otsapa | To sew | bobitero |
| Woof | kononkari | Cord | obidio |
| To spin | mämpetsa | | |

BOW AND ARROW

| | | | |
|----------------------|--------------|--------------------|--------------|
| Bow | piamintci | Arrow | tcakopi |
| Back | onegya | Shaft (cane) | tcakopi |
| Belly | otista | Foreshaft (chonta) | entcäti |
| Middle | onämpinaki | Point (bamboo) | kapiro |
| Arm | otcitika | Feathers | otega |
| Arm (surplus string) | oyäski | Knock | omaretaga |
| Notch | okitcätikära | Knob | toyempiti |
| String | otsa | Arrow for fish | kerithi |
| String (surplus) | oyecta | Arrow for pigs | pentaki |
| Knot | omaritcotäri | Arrow for monkeys | yipatakari |
| Knot (surplus end) | omarita | Arrow for birds | tconkarintci |

MEALS

| | | | |
|-----------|--------------------|----------------|-----------------|
| Breakfast | isikatatcikamani | Lunch in woods | ariskataka |
| Dinner | isikataka okalenga | To eat | nosikatasanbara |
| Supper | inigankiti eskata | To cook | pongotakye |

PHASES OF THE MOON

| | | | |
|-----------|---------------|--------------|----------|
| Moon | kaseri | Full moon | tclilita |
| New moon | teiripekikäni | Dark of moon | pegä |
| Half moon | teirimokänäki | | |

DIVISION OF TIME

| | | | |
|-----------|------------|----------------------|--------------------|
| Day | ketiyiteri | Year | siriagarni |
| Night | sayiteri | Month | sinki |
| Today | mika | Last night | enkarasayiteretika |
| Tomorrow | kamañi | Day before yesterday | tcapiotcitoria |
| Yesterday | tcapi | | |

CARDINAL POINTS

| | | | |
|-----------|------------------|-----------|--------------|
| North | okoti | Southeast | otiunthatha |
| Northwest | katingatankiciri | East | pacini |
| West | impoyitithida | Northeast | watapalikoti |
| Southwest | tsaguanaki | Zenith | inoki |
| South | apiteni | Nadir | sabi |

NAMES OF COLORS

| | | | |
|--------------|------------------|--------------|----------------|
| White | kaitakyi | Yellow | kiteri |
| Medium white | kaitakataiitakyi | Orange | sänkyenari |
| Black | potsitari | Red | kamatcungari |
| Green | kaniari | Coffee color | yanigankiriaka |
| Blue | noronki | Obscure | potsitasimari |

NAMES OF PERSONS

As far as can be determined from the names themselves and from the direct statement of the informant, it appears that the names of persons have no significance. They have no relation to any peculiarity or habit of the individuals, the place where they live, or relationship to one another. There are no family names and no nicknames.

The following individual names of four families will give some idea of the character of the names in use.

FIRST FAMILY

| | | | |
|------------|------------|-----------------|------------|
| Father | cameti | Third son | umpikidi |
| Mother | pananairi | First daughter | petiari |
| First son | icantoidi | Second daughter | ingitaieri |
| Second son | kacankoigi | | |

SECOND FAMILY

| | | | |
|--------|------------|-----|---------|
| Father | tcampitari | Son | tontori |
| Mother | holienti | | |

THIRD FAMILY

| | | | |
|--------|------------|-----|----------|
| Father | tsibitiori | Son | simasiri |
|--------|------------|-----|----------|

FOURTH FAMILY

| | | | |
|--------|--------|----------|-----------|
| Father | poniro | Daughter | manariega |
|--------|--------|----------|-----------|

NAMES OF RIVERS

The rivers are named on account of some condition, such as the presence of an abundance of plants in the water or along the banks of the river, or an occurrence which has taken place in the region of the river.

| | | | |
|-------------------|--------------------------------|---------------|-----------------|
| Pongo, megantoni | large parrot | Mantado | many Campa |
| Urubamba | enters the sea | Mantantciata | anaconda |
| Yanatili | cold water | Tambo, mamore | plenty of fish |
| Matoriata, matore | butterfly | Kanaitciata | sacred palm |
| Tirotitciari | spiny palm | | (tciata, river) |
| Tigompinia | where they are always fighting | Tciombia | fern |

NUMERALS

| | |
|-----------------------|--|
| 1 patiro | 20 pititsongawaquangita |
| 2 pitati | 30 mawatsongatängititciroiäto |
| 3 mawati | 40 mawatainti |
| 4 pitipaiiti | 50 paineropintängettsongagwantciroiäko |
| 5 patipintangkiti | 60 pitientini |
| 6 ganganapipakotini | 70 yasitienti |
| 7 tekaotcokawawhempa | 80 päiäroitärogita |
| 8 okärida | 90 terairikaräka |
| 9 panibati | 100 tsongagwaitäka |
| 10 tcombkawagwaka | 200 pitatientini |
| 11 pitiganapipakotini | 300 mawatientini |
| 12 mämpiro | 400 pitipaiitientini |

COLLECTIVE AND FRACTIONAL NUMERALS

| | | | |
|----------------|--------------------|---------------|-------------------|
| Single | ikantani | A pair | pitäli |
| Double | inaaki | A dozen | patisungatangetci |
| Once | petiroiniatci | One-half | katcititi |
| Twice | piteiniakena | One-third | papatatero |
| Thrice | mavainana | One-fourth | pitipaiyeti |
| Four times | pitipayiinana | Two-thirds | pipateleti |
| Ten times | tsunkavaquakainana | Three-fourths | pitipaiyetiitako |
| How many times | akainiakempi | A half day | okateingaka |

ORDINALS

| | | | |
|--------|-------------|--------|--------------|
| First | okietovio | Fourth | oyiäro |
| Second | nigängitiri | Fifth | iyäski |
| Third | oyiätiridi | Last | tsongatinaki |

VERBS

| | | | |
|------------|----------------|---------|--------------------|
| Admit | puagieri | Divide | pipegakoti |
| Advise | puenkageri | Dress | pubekatari |
| Appear | konetcate | Drink | bihikiämba |
| Approach | rapukali | Eat | nosikatasunbara |
| Arm | kotayeri | Enclose | itcula |
| Arrive | pinikapiwa | Enter | kiyanaki |
| Ask | kantilli | Escape | rasigeri |
| Awaken | kankite | Examine | pakumeri |
| Bark | tsarote | Fall | sirianaka |
| Beg | namanari | Fasten | puesiatere |
| Blow | tasonka | Fear | pika |
| Beat | pusilageri | Fight | gomperi, tacingake |
| Bleach | klatalapitceri | Fill | ciätekahali |
| Born | watcugini | Find | anta |
| Break | tingarayo | Flatten | yananakageri |
| Breathe | anagate | Float | mahathi |
| Bring | matcero | Flower | kaweri |
| Build | potero | Fly | aranaki |
| Burn | kagake | Fold | soprigieri |
| Buy | nebiteri | Follow | iäteri |
| Call | kaimeri | Free | tcakatkali |
| Carry | panigieri | Give | pedi |
| Cast | puemnugieri | Go | kimotaki |
| Chew | hahale | Go out | kimotakero |
| Chop | piusaki | Grasp | kasitcand |
| Clear | raskabkana | Grow | kemoti |
| Clip | teingiteri | Have | aiitio |
| Comb | gacitaka | Hide | isiganaki |
| Come | pimpokaka | Hinder | kamtceri |
| Comprehend | kemeri | Hurt | iteyantaka |
| Cook | pongotaki | Inform | puenkageri |
| Cooked | kotayi | Join | iksantaki |
| Convince | pemakageri | Jump | matcake |
| Count | pigenakateri | Kill | wailateri |
| Cover | pikapanatéri | Know | igiti |
| Cry | kaimi | Lead | puegeletcigari |
| Cultivate | yunkapena | Leave | wanepakutci |
| Cure | ambatake | Lift up | putakateri |
| Cut | watero | Listen | igenakuteri |
| Deceive | siyugerilatci | Litter | puetankuteri |
| Desire | puesenegeri | Loosen | kuseri |
| Destroy | patsanaki | Lose | agirakari |
| Die | kamaki | Make | pantake |
| Dig | ovigantari | Marry | inantaka |
| Displease | remtawana | Meet | papatgeteri |

| | | | |
|----------|----------------|----------------|-----------------|
| Move | siringanaka | Sleep | potcokidri |
| Offend | panukatceli | Smell | kemangatero |
| Pardon | kametitaina | Smoke | oenga |
| Pass | bisanaki | Spit | pabugeri |
| Pay | poinatero | Steal | kociti |
| Persuade | ratcerukagieri | Sting | yogakeri |
| Place | yerokari | Strike | tsenakeri |
| Play | mayempita | Suck | tcomiyegi |
| Poison | tciogeri | Suckle | tcutcupenekeri |
| Prick | matcwiri | Suffer | kabintsanake |
| Pursue | piateri | Support | gimaktari |
| Push | putiagari | Swallow | pinigaki |
| Quarrel | nokitsandatci | Swim | mahatanaki |
| Rain | inkani | Take | bikempa |
| Respond | gaopinata | Talk | ni'iya |
| Restore | penegeri | Tell | tcina |
| Ripen | patkani | Thin | yampteri |
| Rise | kimotanaki | Think | pikiankiseriaka |
| Roast | tasiteri | Throw | kusateri |
| Roasted | kisidi | Tie | kisotiro |
| Rob | tcugeteri | Tired | sigopidi |
| Run | tsiganaki | Toast | kutakeri |
| Run away | egimateri | Trade | resatake |
| Scratch | tcirangatake | Turn | pimpigyateki |
| Secure | kasitcagieri | Unite | piokagieri |
| See | iniaki | Understand | kimorikero |
| Seek | koyethi | Vomit | kamarankyi |
| Select | petgeri | Walk | naita |
| Sell | pimanteri | Walk, on trail | perkageri |
| Send | tigankeri | Wash | kivero |
| Sew | bobetero | Watch | pikawakeri |
| Shake | kowaki | Weaken | katcendi |
| Shelter | mkatseri | Wind | imasantikero |
| Shoot | tsemiari | Wish | hemateri |
| Show | pekategateri | Wound | lueliukateciti |
| Siege | psomitcani | Wriggle | hemani |
| Sing | matiki | Write | sangibandi |
| Sit | piriniti | | |

ADDITIONAL WORDS

| | | | |
|-----------|--------------|---------|---------------|
| Above | kätonga | Also | alyikangotaki |
| Absent | kaiimeteri | Always | ikantani |
| After | empolini | Ancient | ibisalitaga |
| Afterward | impoyina | And | iro |
| Alone | painiroeni | Anger | ikantaki |
| Almost | ithirokiakio | As | teaikanaiiti |

| | | | |
|--------------|---------------------|------------------|--------------------|
| Ascending | awakanoka | Continually | ritcakatci |
| Bag | tsibeta | Cool | okatcingali |
| Balance | pamanetwatci | Corpse | hiparatceri |
| Ball | gwara | Cotton | empeyi |
| Balsa | sinthipo, tsaiye | Crazy | ibigatara |
| Basket | tsibeta | Crowd | kagite |
| Battle | gantagantci | Crude | kaniari |
| Beard | isipaktoni | Cruel | wagi |
| Beauty | kamitina | Cup | koboyari |
| Beautiful | kametataki | Cylindrical | kanerongipoati |
| Bed | nomagamento | Dance, <i>n.</i> | isingataka |
| Before | paikomprapayeti | Danger | pai'iroiseraiti |
| Besides | fenu | Dawn | ingawipakani |
| Big | atioteni | Day | kreitai'ita |
| Bird | tsimedi | Days | kreitai'itayetiri |
| Blind | steniari | Deaf | maiympi |
| Books | sangebandi | Death | kamaki |
| Bottom | tsompoiari | Delight | nogavintsataka |
| Bowl | kobiti | Descending | malnoaka |
| Box | tciboro | Design | pturi |
| Boyish | nampiriantci | Difficult | okomita |
| Brave | paiiroisiraliti | Direct | katingari |
| Breeze | tempia | Distance | tsamani |
| Bridge | pabitci | Down | kamatikia |
| Bright | intapuriatca | Drop, <i>n.</i> | suprawata |
| Brilliant | osati | Drum | tambora |
| Broad | alusaranta | Drunk | pwamitapa |
| Brook | niatini | Dry | oroyero |
| Broom | sateirifi | Dust | oyiangka |
| Burn | potero | Early | tsitikamana |
| Burrow | imorinti | Earth | kipatci |
| By | apina | Easy | terakomaita |
| Canoe | pitotci | Egg | ihitso |
| Careless | operataka | Eggs | ihutsoki |
| Cancho | kapi | End | nikatharo |
| Caution | puematapa | Enemy | noyisabintsari |
| Chest | kogeta | Enough | teinikanta |
| Chicha | kuya | Evil | palitcagieri |
| Circular | kabogitati tsomonto | False | pitsoega |
| Class | irorokañoritha | Far | semani |
| Clay | tcihispa | Fat | kavi |
| Clearing | sananka | Feeder | kamala |
| Cloud | menkoli | Feminine | cinani |
| Coal of fire | tcitcerna | Fever | manticgarintci |
| Cold | katcingari | Feverish | manticgalintcienda |
| Collar | wepieki | Fill | saputkale |
| Color | katciringaingari | Fine | putenane |

| | | | |
|------------|------------------|----------------|----------------|
| Finish | nikauna | Lake | unampini |
| Fire | teitci | Lame | piapi |
| Fishhook | teagaluntci | Lard | kipatsi |
| Fishing | tatkateina | Large | omarana |
| Fit | pupateri | Late | cungana |
| Flame | teerna | Leaf | otsego |
| Fleshy | keriigeti | Leak | sagigiawa |
| Flower | katceli | Lean | yaitcali |
| Fog | enapatkani | Length | ogatsansani |
| Food | niktci | Level | pata'aka |
| For | itapla | Lie, <i>n.</i> | pitsuego |
| Forest | ciyakana | Life | isedi |
| Foundation | etske | Light | molikaii |
| Friend | nitenagalitha | Like | itemgieri |
| Front | intati | Listen | igenakuteri |
| Full | iumarañi | Lofty | bemi |
| Girlish | nomperami | Long | ogatcan tcani |
| Go | piata | Loose | kureri |
| God | idioci | Machette | sabari |
| Gold | koli | Masculine | siredi |
| Grass | kutcanala | Mat | citatci |
| Grief | okatciti | Mature | irakakaii |
| Group | hitcolero | Mild | salaglate |
| Grove | teiyi | Milk | teutcu |
| Handsome | kameteri | Mist | menkori |
| Happy | yataki | Mister | virakotci |
| Hard | okwasoti | Moon | kesiri |
| Hat | tcoko irontce | Moreover | tiara |
| Headache | okatcitonoyitoki | Morning | kamana |
| Health | mampapagempi | Mountain | enkenisi |
| Heat | katcaringastaki | Mud | okisoti |
| Hence | pegineriki | Music | kowerintci |
| Here | evi | My | ibiani |
| High | umarañi | Naked | nogatsansaniro |
| Hill | etenahapu | Name | ibwairo |
| Honesty | eneriekani | Nausea | plapliri |
| Hook | kitcapi | Near | tcoeni |
| Hot | ikatcaringati | Needle | kitsapi |
| House | pankotci | Neither | vi |
| How | wanespo | Nest | imanko |
| Hunger | ptasigaki | Nests | imaiotkataka |
| Hut | maspoti | Net | kitcari |
| Island | kanikali | Never | garato |
| Joyful | sinetaki | Never | ikwiepa |
| Justice | piwakekali | Nevermore | teratio |
| Kind | satiku | New | itcalyida |
| Knife | kotcero | Next | puniti |

| | | | |
|------------------|-----------------|------------------|-----------------|
| Night | sayitiri | Remote | osamainti |
| Nights | tayitayeti | Respond | gaopinata |
| No | tero | Rest | yapisigepideri |
| Noise | sriempogi | Rifle | airiapa |
| None | tera | Ripen | patkane |
| Noon | katingataki | River | eni |
| Not | tera | Roast meat | kisidi |
| Nothing | mameri | Robber | kocidi |
| Oar | homaruntci | Roof | oteña |
| Obligation | dibiwatci | Root | ositsa |
| Obscure | pawatsari | Round | kamaronkiti |
| Observer | wakalikano | Rubber | konore |
| Ocean | omarani | Sad | kisa ingantaka |
| Of | na | Sadness | kacina |
| Old | ibisaditaga | Salt | tibi |
| Open | tsitheaka | Same | kanyoretha |
| Opinion | retcikagendi | Sand | empanaki |
| Opposite | intaii | Scalp | wimpta |
| Orphan | merati | Sea | inkari |
| Oven | bitsahari | Seat | tsenkwarontstci |
| Over | enokatiro | Seat | ptepali |
| Paddle | kiumaluntci | Secure | ikañotakatio |
| Pain | okatciti | Seed | okitsoke |
| Paint, <i>n.</i> | ptsotemba | Sense | riwataratkali |
| Panpipe | siungalintci | Sensible | tseyiotsa |
| Part | pesinieti | Servant | nomperatalida |
| Passion | apakapalu | Shining | engite |
| Pebble | empäniki | Short | otcariati |
| Pepper | kumuli | Shotgun | eriäpa |
| Perfect | ageneriko | Sick | nomantcikata |
| Pine | soyipiki | Silver | koliki |
| Pipe | penarintci | Since | itakaro |
| Plenty | intagati | Skin | gespugeri |
| Poison | kepigari | Sky | inkiti |
| Pool | ipua | Slave | nomperani |
| Poor | terairasintempa | Sleep | potcokidre |
| Pouch | sapa | Slowly | atanake |
| Promptly | yyakithi | Small | tcirepekini |
| Pure | onterotankitca | Smoke | oenga |
| Quick | sintci | Smoke (pipe) | pontcitciawa |
| Quickly | mika | Snow | tcaraga |
| Quiet | makana | Some | pimare |
| Rain | ingaña | Some, <i>pl.</i> | pimäreni |
| Raincoat | wurutegwa | Somehow | ihuneipineni |
| Raw | sotsuta | Sore | restaki |
| Ready | sintci | Soul | seleteci |
| Relative | puemuli | Spear | otse |

| | | | |
|------------|---------------------|---------------|------------------|
| Spider | eto | Turn | ocungataka |
| Spoon | bisiria | Twins | apinatetcpa |
| Stand | ranta | Ugly | terakameti |
| Star | impokero | Underneath | sabitithitha |
| Stone | mapui, emparaiya | Unknown | mabsahata |
| Stool | sinkwarontci | Unripe | onatcerigapataga |
| Straight | tegongari | Until | noata |
| String | otsa | Unwell | yai'itca |
| Strong | katankero | Up | katonga |
| Stop | cenaka | Vacant | terontima |
| Sufficient | intagati | Various | itibuiteri |
| Suitable | tciki | Voice | piniaki |
| Sunset | simpopokiriremkapai | Voices | iriniani |
| Sugar | potcari | Voyage | idiataki |
| Sun | poriatecira | War | gantagantci |
| Support | gimactare | Water | nia |
| Sweet | aputcati | Water running | kamatika |
| Swiftly | paitanakisintci | Wave | oboli |
| Table | igapongkari | Wearry | cigopiri |
| Thief | ikociti | Well | potabayetaka |
| Then | neitanaki | Well done | wanogetcilei |
| There | feka | Wet | toastaki |
| Therefore | empoyini | What | tata |
| Thick | kupunegi | Whence | inuaki |
| Thirst | meratci | Where | teraka |
| Thorn | kwiri | Whither | ivipenutci |
| Thread | mämpetci | Wide | äliopoki |
| Through | songpoyiteri | Wind | tampia |
| Thunder | karlyethi | Wing | ibanki |
| Tobacco | sed | Wings | piteli'itsokieta |
| Together | itentagi | With | ta |
| Too | paiyabitsanaki | Within | kiäki |
| Top | watceptagi | Woods | koväsidi |
| Town | itimani | Word | idiniäne |
| Trail | abotci | Work | ilantani |
| Trap | tsigarintci | Yes | hea |
| Tree | entcäto | Yesterday | tcaki |
| Tribe | iracirikoini | Yet | totata |
| Trifle | yitataki | Yonder | sitikana |
| Truth | alitsänokyo | Young | metciukarira |

CAMPA

Vocabulary. The following vocabulary was obtained from rubber men on the Apuriah River, a branch of the Etenes in Peru.

FAMILY

| | | | |
|----------|-------------|--------|-------------------|
| People | atiri | Sister | tcio, utcu |
| Family | nustcaninga | Child | wanampi |
| Woman | sinani | Boy | sihiramba, lihani |
| Brother | tetco | Infant | nohehna |
| Brethren | piariri | | |

PARTS OF THE BODY

| | | | |
|----------|------------------------|----------|------------|
| Skeleton | tumliki | Throat | hatsano |
| Bone | hitonki | Shoulder | atapiki |
| Head | piti | Arm | hembiki |
| Hair | naistci | Hand | tako, nako |
| Eye | oke, nokis | Nail | asketa |
| Nose | ahiri | Leg | habitsa |
| Mouth | hananta | Penis | habsabi |
| Teeth | himititsa, nahi, naite | Buttock | sabitei |
| Tongue | nonene | Blood | irahani |

ANIMALS

| | | | |
|-----------|------------|-----------|----------|
| Monkey | pustciniti | Bat | pigiri |
| Jaguar | maniti | Snake | maranki |
| Dog | utkete | Turkey | kanali |
| Peccary | samani | Partridge | macangwa |
| Hog | onitairiki | Poweel | samiri |
| Boar | tcindoli | Pucucunga | sangati |
| Armadillo | mairi | | |

PLANTS

| | | | |
|----------|----------|------------|---------|
| Forest | tumiriki | Balsa tree | cindipa |
| Camote | kuliti | Vanilla | arupi |
| Plantain | pahantsi | Leaf | pano |
| Papaya | emitcusi | Raspberry | takiru |
| Wood | traka | | |

VERBS

| | | | |
|--------|------------|---------|---------------|
| Afraid | pingatsave | Boil | pukiteri |
| Arrive | nunapapare | Burn | pinaheri |
| Ask | psambiteri | Dance | potsenangempa |
| Attack | putctero | Deceive | tamatabitana |
| Begin | ustciatini | Die | pingamatini |

| | | | |
|-----------|-----------------|------------|---------------|
| Discover | kovite | Like | pinguerero |
| Do | pantserika | Load | pinkikero |
| Drink | piranakiero | Loan | ambateri |
| Dry | pinotsokeri | Look | nagi-ro |
| Call | papinitaka | Love | tsimpe |
| Carry | noktaikati | Make | pantero |
| Cheer | katcirigaitari | Marry | pinkianti |
| Chew | sihimpoki | Nod | pinguiki |
| Choose | atsiriki | Pack | hamesteitaiti |
| Couple | nonintagi-ro | Paint | psankinatseri |
| Cover | untsingari | Pair | kametsalini |
| Cry | pingagemua | Pass | pistcianake |
| Cure | pabkeri | Present | pempena |
| Eat | puya | Produce | pantero |
| Embarrass | klimkitaka | Push | pitastingero |
| Encounter | pitonkiteari | Receive | paheri |
| Enter | pinke | Refresh | pecta |
| Entertain | numbatctembi-ro | Rest | pimacuta |
| Erect | pubitckero | Rejoice | titcirantea |
| Escape | pistciapisateri | Retake | pingobite |
| Fear | pitsario | Roast | pankeitse |
| Find | pistcibokerkasa | Rob | hameanguste |
| Fish | pangahati | See | pameniri |
| Freighten | pomistceri | Seek | pamini |
| Give | pimbero | Set | piatanaki |
| Go | natageta | Shoot | pinsiero |
| Govern | pimberanateri | Shuffle | putironki |
| Grind | notare | Singe | pintiri |
| Have | timatsi | Sip | piri |
| Hear | pingueme | Sleep | pimei |
| Hesitate | amimungarati | Smell | pasankweso |
| Hide | pimanevi | Speak | pimiabate |
| Hit | timbosateri | Strike | puheri |
| Hope | kuagika | Swallow | pantana |
| Hunt | pangatcati | Swim | nahamate |
| Hurry | pagirani | Teach | tuameteri |
| Inform | numakaembi | Travel | pitcanake |
| Inhabit | pinampi | Understand | tepinguema |
| Join | pwabitero | Undress | puinkerota |
| Jump | ciananga | Unite | teovianti |
| Kill | puyeri | Urinate | psindaitea |
| Kiss | patemineri | Wait | kitata |
| Labor | pipankempa | Walk | pinkibante |
| Lengthen | pinotckeri | Wish | kitenintero |

ADDITIONAL WORDS

| | | | |
|-----------------|---------------|-----------|---------------------|
| Able | ariotaki | Few | teacikits |
| Alone | aparoni | Figure | maroni |
| Arrow | tcakopi | Fire | pamari |
| Ashes | samampa | First | ucanteni |
| Axe | sihatca | Fish | cima |
| Bad | tukametsati | Flame | pamari |
| Balsa | lamengolentci | Food | aiti, aitsci |
| Banana | pariants | Four | apaporenro |
| Bank | jutatikwero | Friend | tciringa |
| Barbarity | maminto | Front | ananka |
| Basin | mitaro | Good day | keti comprats |
| Basket | kandiri | Gold | pistcianati |
| Beautiful | kametsari | Gum | katci |
| Behind | somani | Happiness | tubeatero |
| Below | kivinga | Hard | kisalino |
| Bench | tsame | Heavy | hina |
| Black | kisahali | Hill | tsembi |
| Brave | kisatca | Hot | sabataki |
| Bridge | pabirontci | House | pankotci |
| Call | hibagi | Hunger | nutasetsi |
| Candle | pamiri | Hungry | nutase |
| Canoe | pitatsi | Hunt | paciniri |
| Catarrh | kamantci | Important | kandero |
| Chacara (field) | nuani | Indeed | atcaniku |
| Cedar | intcato | Inca | kuniri |
| Club | sibitci | Instinct | tiotiki |
| Cold | katcingaiteri | Knife | kutciro |
| Comb | kickiri | Language | tcakra, atsamaeteri |
| Companion | yentsi | Land | impatse |
| Corn | teinki | Lard | trenka |
| Cough | kamantci | Late | tsanitake |
| Coward | tenungaisi | Lean | matsatanaki |
| Cushma | zalenti | Lie | pitsaha, nutsaha |
| Danger | inawaka | Little | kopitsokigi |
| Downward | aniringagi | Long | onimotsansal |
| Drink | piarintci | Lower | antakwirunta |
| Drop | katsuali | Lumber | pitotsi |
| Dry | paronagero | Many | putcaiki |
| Dung | hatsumi | Meat | hibatsa |
| Enclosure | buantci | More | hotseba, aimiro |
| End | nutshangakero | Mound | tongali |
| Enemy | nusamakaso | Much | nuntsemp |
| Excrement | atia | Mud | kipatsi |
| False | pakeandenake | Naked | pithali |
| Feather | cinaki | Near | haknakigi |

| | | | |
|-------------------|----------------|------------|--------------|
| Neither | oseki | Star | impokira |
| Never | rekatsinume | Stone | mapi |
| Next | taitikeri | Straight | thatcitanaka |
| New | hanali | Strong | sintciri |
| Night | itsteniri | Sufficient | ariotaki |
| No | kite, tiva, ti | Summer | sitastcintci |
| Noise | ayambita | Sun | urialstciri |
| None | tekatsi | Sweet | putcahali |
| Nothing | itekatsi | Thin | ernararu |
| Nourishment | sinkiri | Thirsty | numiri |
| Offensive | istebale | This | kohikanti |
| Oh | nimaika | Thou | abiro |
| One | apatiro, apito | Thread | mampetsa |
| Only | apaniro | Three | mawa |
| Other | pihate | Thus | ariove |
| Paddle, <i>n.</i> | komarontci | Today | unigatamani |
| Pain | katcirini | Tomorrow | sertikero |
| Playa (sand bar) | hatsepa | Top | haito |
| Poor | tekatse | Town | emetjulini |
| Pot | kubiti, koitsi | Two | apite |
| Quickly | usipaite | Ugly | tengametsati |
| Red | ivaka | Unique | aparo |
| Remain | hetepindi | Until | oni |
| Rind | riniki | Urine | hotsini |
| River | ña | Warm | masabirintci |
| Road | habatsi | Well | kametsari |
| Roast corn | tcinki | What | kikongogita |
| Rubber | tutcato | Whence | piateka |
| Ruddy | tcungari | Where | tsotsinika |
| Sad | kinkitsari | Wherefore | hateka |
| Salt | tibi | Which | hupagita |
| Salutation | sutsatsmi | White | tamaruri |
| Sea | sindoritea | Whether | hateka |
| Shirt | notsinka | Whose | hateka |
| Sick | kamantci | Why | puetaka |
| Side | knakero | Wool | tcuastcaki |
| Silence | piesekanake | Yes | ehe, ihi, wa |
| Sleep | ariopimae | You | pi |
| Small | hinkiri | Your | tsavi |
| Soul | inkwi | | |

PIRO

Distribution. One of the most important Arawakan tribes in the Amazon region is the Piro, sometimes called Chontoquiro or Semirentci. They occupy the highlands around the headwaters of the Purus, Mishagua, Camisea, and Manu Rivers. In former times there were large groups living along the Urubamba, where they came in contact with the Inca, and assisted them in building the fort of Tonquini. Samuel Fritz's map (1707) shows them in the section between the Ucayali and Pachitea Rivers. Today



FIGURE 3
Piro man

their numbers are reduced, through contact with white man's civilization, to five or six hundred.

My information concerning the Piro was obtained at Sutlija and Portilla from a chief of the tribe, through Sr. Torres, a Spaniard, who had lived among them for a number of years, and from my own observations at the two Indian villages.

Organization. The Piro have a very good tribal organization under the leadership of a hereditary chief who has absolute authority. The chief is called Klineriwakipiya. It is not his individual name, but the name of the office of chieftainship, which he inherits from his father. If a chief has no son, his brother inherits, and the descent is in his line. If the son is too young to exercise his authority when his father dies, the oldest man in the tribe performs the duties of chief until the boy is about eighteen or twenty, when he assumes his office. Some time ago, the chief at

Portillo died without sons. His brother, who inherited, was old and did not speak Spanish, and so he passed the office on to his oldest son, a young man of twenty-five years, who spoke some Spanish, a great advantage when dealing with the rubber men. He had two small sons, who have their own individual names, but the oldest son is called Klineriwakipiya, in addition.

The chief takes control of all the affairs of the tribe, and always remains at home except on very special occasions. He never does any work in the fields, goes hunting, or on a journey, but sends men to perform all of these duties. He determines upon an undertaking, and assigns each man to his own particular task. The chief settles all disputes that arise within his tribe, or between tribes. There is very little evidence of crime of any kind, and when the chief was asked about it, he said that there were no quarrels, that no one ever took anything that did not belong to him, and that there was no excuse for committing murder. When asked what the punishment would be if a wife should prove unfaithful, he replied that he did not know that such a thing had ever happened.

Houses. At both villages, the Indians were living in a miserable condition in a few houses grouped together on the bank of the river. At Sutlija we found a deserted Piro village which gave us a good idea of what their former homes had been. They left this village on account of sickness. Many had died, apparently from fever and dysentery. On this account they moved down the river, and built new houses. At the deserted place, several houses were built around a very large field. The houses varied in size according to the families occupying them. One small house was twenty feet long, twelve feet wide, and eighteen feet high to the ridge pole. The houses are oriented north and south, and sometimes have the north end closed, but for the most part the gables are open to the ridge pole. The roof comes down to within five or six feet of the ground. A platform, four or five feet high, is built along one side or across one end, occupying two-thirds or more of the whole space. This platform is covered with split chonta palm, and is used for a living and sleeping place. A notched pole leads from the ground to the platform. The fireplaces are along the sides or at the end, their location depending upon the position of the platform. Firewood, cooking pots, and utensils of all kinds are kept under the platform. There is sometimes a small



Piro Indians

platform over the fire for keeping food, and another outside of the house, either covered or open, which is used for storage and for drying clothing.

They have no large hanging baskets or plaques over the fire for smoking food, which are so common among the Campa. Sometimes the cooking place is in a very small enclosure outside the main house. Baskets, bags, bows, arrows, and other implements, hang from the roof. The largest house we saw was forty feet long, twenty feet wide, and eighteen feet high, with a steep roof. The ridgepole was resting on the ends of three chonta palm posts. The rafters were thorny palm poles about two inches thick, reaching from the plate to the ridgepole, without other support, and placed one and a half feet apart. The roof was made of chonta

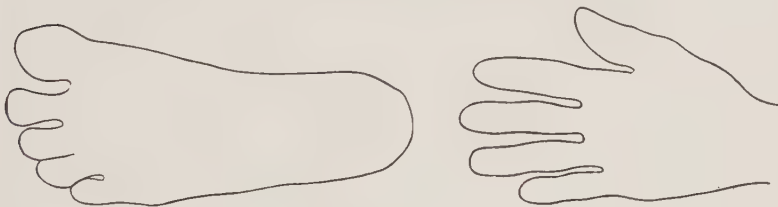


FIGURE 4
Outlines of hand and foot of Piro Indian

palm leaves; three or four fronds were tied together in a group, and each group fastened eight or ten inches apart on the rafters. Under the platform there were several burials. It is the common method among the Piro to bury the dead under these platforms.

The Piro are the greatest lovers of dogs of all the tribes; they breed them for trade, and give them great care. They are kept in enclosures underneath the platforms.

Food Supply. The Piro have larger fields and grow more agricultural products than any of the neighboring tribes. Their staples are cassava, corn, plantains, and sweet potatoes, which are common among their neighbors. The corn is ground in a mortar made of a log, the end of which is burned out to sufficient depth to serve for the purpose. The pestle is made of hard wood. Corn is eaten on the cob, parched in a shallow pot, or its meal is made into bread. The Piro used no salt until the coming of the Whites. They eat all kinds of wild game, with a few exceptions. They will

not eat the common red deer, because the soul of man at death goes into the red deer. Their belief in this respect is similar to that of the Macheyenga, except that among the Piro it is only the man's soul, not the woman's, that goes into the deer. They will not eat domesticated chickens and ducks, because these birds eat refuse, yet they eat their eggs with great relish.

In hunting they use the bow and arrow for shooting game and fish. In using the bow they hold it in the right hand, with the end having the loose string uppermost, the thumb gripping the bow and the forefinger over the arrow, which is placed on the same side of the bow as the hand. The bow is drawn with the third, fourth, and fifth fingers on the string, and the end of the arrow is held on the string with the thumb and index finger. It is a noteworthy fact that nearly all of the men and boys seen using the bow held it in the right hand and drew the string with the left. Men who were right-handed in other ways took the bow in the right hand, and drew it with the left.

The Piro make rough coarse pottery (plate 6) for ordinary use, and depend on the Conebo for finer vessels. Their pottery is made and burned by the same method used by the Conebo. What appears to be a glaze is only a coating of resin from the yutahy-sica (*Hymenoe* sp.). They make carrying and working baskets for holding their cotton, spindlewhorls, and working implements; also the small telescope basket common among the Campa, which is used for carrying their toilet articles and trinkets (plate 7). When on the trail, they carry game in a rough basket made of two palm leaves.

Sieves for straining chicha are made of small palm fronds woven like mats, fifteen inches square, and bound with a framework (plate 7). They grow tobacco, which they smoke in large wooden pipes with short bird-bone stems, like those of the Conebo (figure 7). Tobacco is also used for making snuff, which is taken through the nostrils. When the tobacco is dry, they hold it over the fire in a leaf until it is very crisp; it is then pulverized in the palm of the hand, and taken by means of the colipa, a V-shaped instrument made of two leg bones of a heron (figure 5, a). The end of one bone is decorated so that it may be distinguished from the other. The snuff is placed in the decorated end, while the other



Piro Indian family

end is placed in the nose, and an assistant blows the snuff with a sharp puff into the nostril. Sometimes the arms of the V are made so short, that while one end is placed to the mouth, the other reaches the nostril and allows the operator to do his own blowing (figure 5, b). This same instrument is used by the hunter for taking the pulverized, roasted seeds of *Acacia niopo* as a stimulant and narcotic. The hunter administers the same powder to his dogs, believing that both he and the dogs will be more alert and have clearer vision.

They make fire by the common method of twirling a stick between the palms of the hands upon another stick used as a base. They are experts at keeping the fire, and it seldom has to be made by this method. When building a fire along the trail where the wood is wet, they gather logs together and lay them lengthwise, large ones on the bottom and smaller fragments on top, make shavings, gather twigs, and build a fire on top of the pile. As the fire burns, coals fall down through the logs, and soon they have a hot fire, just where it is needed for the cooking pot. I should like to recommend this method to campers when they are compelled to use green or wet logs and have little kindling.

Dress and Ornamentation. The Piro dress in cotton garments, as do the Campa tribes about them. The men wear the long cushma (plate 4), while the women usually wear a skirt that reaches below the knees, and a cloak over the shoulders. The skirt is woven in one piece, and sewed up on the side (plate 8). They put it on by stepping into it, pulling it up, and folding over in front. It is held in place by turning down in front where the fold comes.

They gather the wild cotton, and spin it with a spindle of chonta palm, and a whorl of pottery (plate 9). They twirl the spindle between the thumb and index finger, with the other end of the spindle resting in a small gourd which contains some fine white ashes, used to keep the fingers dry. They spin the thread very fine, and wind it double on the ball. They afterward use it as needed, by twisting the two threads together with the hand on the thigh. As the wild cotton is gathered it is stored without cleaning in small leaf baskets, which resemble hornet nests. When it is needed for spinning, the seeds are removed, and the loose cotton

beaten with a small rod. The weaving is done on a loom (plate 9), which has one end attached to a house post, and the other to the woman's body.

Besides the cushmas, skirts, and cloaks, they weave bands for their legs and arms, sashes, and small bags (plates 8 and 9). One end of the loom for narrow bands is held between the toes, while the other is tied around the body. The Piro do not wear nose, ear, or lip ornaments. They paint the faces, hands, and feet

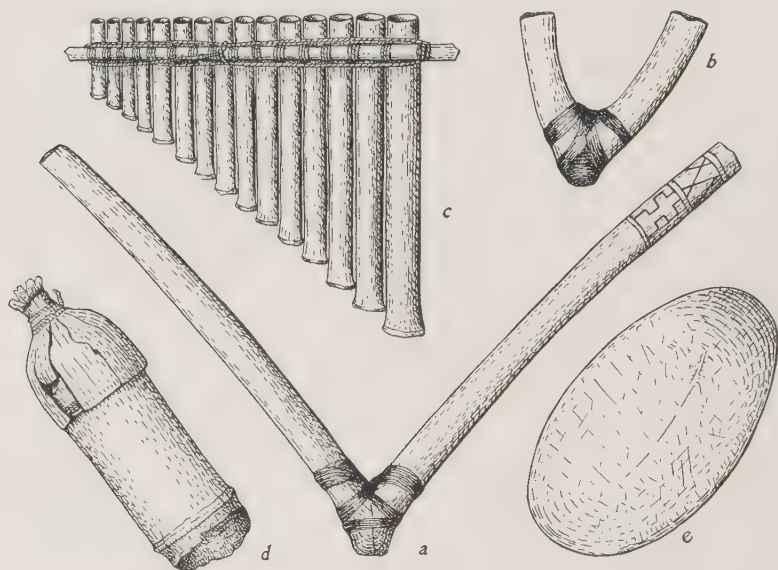
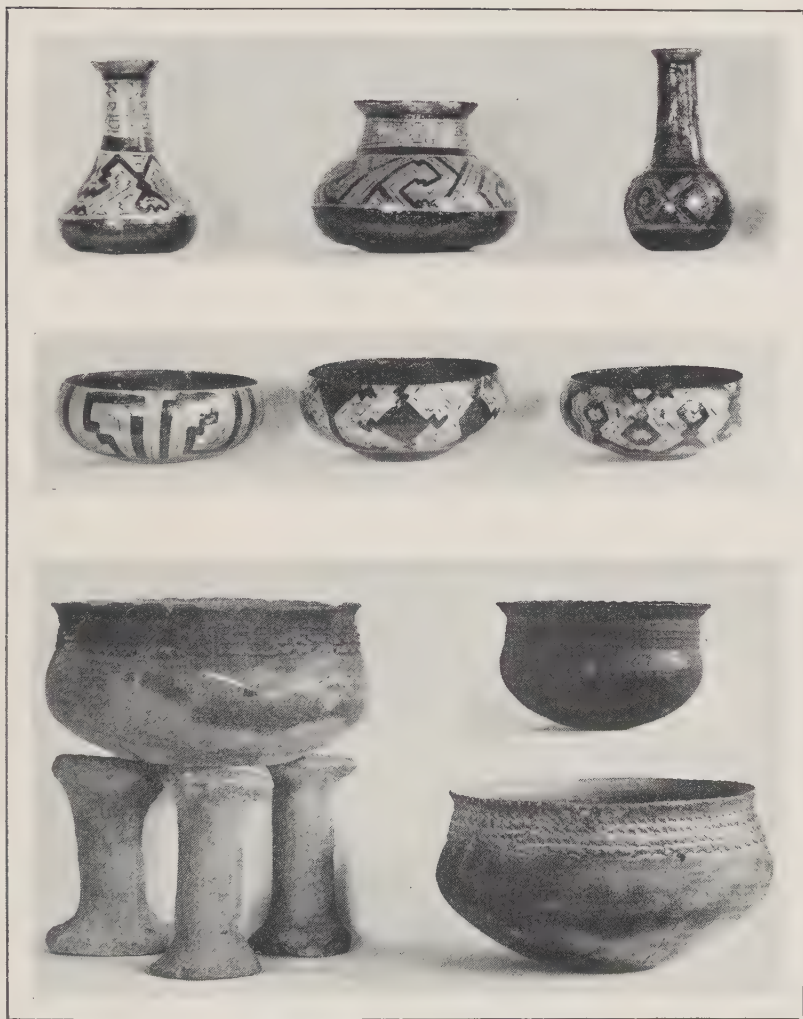


FIGURE 5

Piro Indians: *a, b*, Snuff tubes; *c*, Pan's pipes; *d*, Box containing paint; *e*, Calabash scraper used in pottery making. (About 1/5.)

for protection against insects and the sun. The whole face may be painted or there may be lines or dots on the forehead, nose, and chin, with triangular patches on the cheeks. The men sometimes have angular designs tattooed upon their lower arms. The head of the infant is not deformed. The hair is worn long, and cut across over the forehead. The men remove the few hairs on the face by holding the edge of a knife or shell against the thumb. The men have no hair on the body with the exception of the pubes, and it is not abundant there.



Piro pottery vessels, and terra-cotta supports for cooking pots. (1/8.)

Marriage. The Piro marry within the tribe, but outside their own village. A young man may select his wife for himself, or parents who have children near the same age may agree among themselves that the children shall be married when they reach the proper age. The children are then known as man and wife or as belonging to each other, and they may even live together, but are not married until after the puberty ceremonies have been performed. A man may take a child for his wife, and keep her in his family until she is old enough to be married. The father of the chief at Portillo had a wife not more than ten years of age living with his family, while his first wife, who was old enough to be her grandmother, was still living.

When a young man thinks of taking a wife, he speaks first to the chief, and if the chief thinks the marriage agreeable, he speaks for the young man to the girl's father. If all agree, the chief takes the young man and woman by the hands, leads them first to the girl's parents, then to the boy's parents, and if no objection is raised, he, without other ceremony, pronounces them man and wife. At the same time, a dance takes place with the drinking of chicha, and after it is all over the young man takes his bride to his own home.

The marriage cannot take place until after the puberty ceremony of defloration, "pisca," has taken place. It is said that a woman is unclean until after pisca has been performed. The operation is performed by the old women in private, while a dance is going on outside. The girl is made drunk with chicha, and the hymen is cut with a bamboo knife. It has been said that the Piro were very loose in their marriage relations. The ground for this report is the custom which is common among the Piro of the loaning of wives. When a Piro, without his wife, visits a friend at a distance, a wife is loaned him for the time of his stay.

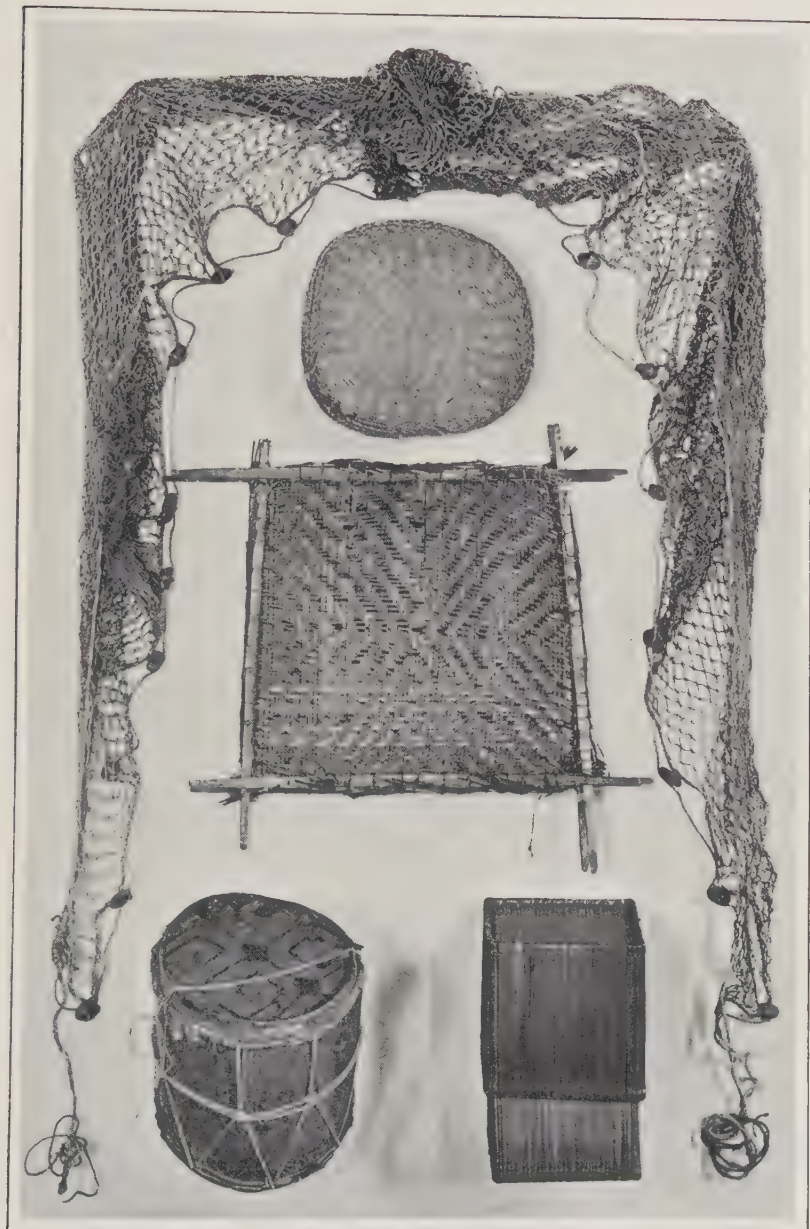
The families are not large, according to reports from the Indians and from owners. There are rarely more than three or four children in a family. They give as reasons the fact that women have children early, that the children nurse until they are three years old because of the lack of other proper food, and that women work as men. There does not appear to be any control over birth, or any great infant mortality. The largest family we saw had four sons and two daughters with one mother. The daughters were

married, and one of them was living away from home. When asked the names of the children, the father had no difficulty in giving the names of the boys and the one daughter present, but he had to think a long time before he was able to recall the name of the absent daughter.

When a woman is about to be confined she retires alone to the forest across the river. After the birth of the child she brings it to the river, washes it, bathes herself, and returns to the village. Women carry their children in a cotton bandoleer, in which the baby sits astride the mother's hip, or with arms and legs in front grasping the mother's garments. The burden baskets are carried with a tump-line.

Medicine Men. The Piro have no medicine men. The chief takes care of the health of his people. He uses certain herbs and manipulations. The people are all taught to take care of themselves, and one is constantly surprised at the things they know. On one occasion, a boy of eight was stung by a large black ant on the end of his great toe; the sting of this ant is more painful than that of bees or wasps. He made no outcry, but pulled down a thin vine, and wrapped it around his toe; then looking about, he found a thorn with which he pierced the end of his toe in a dozen places or more, producing profuse bleeding. In a few minutes he removed the vine, and the pain and poison were gone — the most efficient remedy possible in such an emergency.

The Dead. When a man dies, he is buried in the floor of a house, at full length, and the family moves away and builds another house in some other part of the field. A man's bows, arrows, pipes, and everything he possesses, are buried with him, except his dogs, which are killed and buried in a grave near by. The men of the immediate family take charge of the body and bury it; in the meantime the women moan and weep outside. A widow cuts her hair close to her head, and is not allowed to marry again until her hair has grown out. All the children, also, have their hair cut. The chief takes care of the widow and the children until she is remarried. The Piro do not like to handle a corpse, and will not do so except to take care of their own dead. When there is an epidemic in the village they believe that it is due to the presence of a "buija," or witch, and the chief may designate the witch and order him killed.



Piro Indians: Net with stone sinkers, woman's work basket, square basket sieve for straining chicha, drum, and telescope trinket basket. (1/9.)

Personal Habits. The Piro are the cleanest, in person and about their houses, of all of the tribes in the upper Amazon. They bathe, and wash their clothing frequently. On the trail or when traveling in canoes, they always carry an extra cushma in a waterproof bag to sleep in. In the evening when camp is made and the work all done, they bathe, wash their clothes, hang them over the fire to dry, and then put on their dry clothing. They work in the rain, but always put on dry clothes when camp is made.

They are thoughtful for the comfort of others, offering food and drink. They are good natured and lively, often joking and playing tricks upon each other. They are very apt in comprehending what is needed or desired of them, and respond freely and quickly. They are curious to see, and to understand new things. When they saw me using a magnet they were very much interested, and within a few minutes had tried it on everything, and were most astonished to find that nails, end to end, would hold together. The women are modest and reserved, yet not as timid as among some other tribes. They show their modesty by drooping the head, and allowing the loose hair to fall over the face. When we were trading with them we allowed them to look over everything we had, without any restraint, to select what they desired, and to bring to us an equivalent. Our confidence was never betrayed, even when we allowed them to go to another village and return the next day. Upon the whole we agreed that the Piro were the most manly savages we had encountered, and most worthy of being treated as our equals.

The Piro, like many of the other tribes of the rubber regions, have been captured in the past and treated as slaves. On December 21, 1908, a Spaniard in the employ of Sr. Rodriguez arrived at Serjali with five families of Piro: five men, five women, six children, one peccary, five dogs, and nine chickens. Two of the children were so small, they were unable to walk. They camped on a sand bar near our own camp. Each family built its own fire, and when the food was ready each woman contributed her share of the food. All the men and boys ate together in one group, while the women and girls gathered about the pots and ate what was left when the men had finished. When I asked if there was danger of the Indians escaping during the night, the man in charge said, "No, all I have to do to prevent their escap-

ing is to chain the two women with the babies to a tree; the men will never leave the women and children in possession of a white man." I am glad to report that the Government of Peru later secured the freedom of these Indians and punished their captors.

Cats Cradles. *Hopotske, a pole with spines used to grate cassava.* String over thumb and left finger end hanging down from palm; pull palm string with index of right hand and let end fall; pull palm string again and end drops; with index of right hand take up from through loose loop the outside left finger string and outside thumb string and pull out through loose loop, thus having four strings which pass over to back, one between each finger and let fall behind; pull palm string which gives a basket-like form with the loop around each finger and thumb, apex five inches from palm.

Wapuoitsa, threads. String over the index of left hand and thumb of right; take up string between thumb and index on other index from above with downward turn to right; take up on back of five inside the string, under and over index strings; let go the string and take up on thumb the inside fifth string over the other strings; put index inside strings over thumb—take off lower thumb strings and take them up with ends of index turned down, or place end of index through these loops; let go other strings and holding with the index, turn palms outward and the figure remains.

Vocabulary.

THE FAMILY

| | | | |
|------------------|-------------------|----------------|---------------|
| Family | numuli | Boy | mteri |
| Man | ineri, xaxi | Girl | setcumteri |
| Woman | setcu | Infant | mptero |
| Husband | paneri, napoklero | Nephew | noparakleri |
| Wife | panandu, haninda | Niece | noparakleru |
| Grandfather | tote, toti | Cousin | molima |
| Grandmother | nahiro, hero | Father-in-law | nigimatieri |
| Father | papa, ri | Mother-in-law | nigimagini |
| Mother | mama, endo | Old person | keri |
| Uncle | zapa | Young man | magle |
| Aunt | kiukiu | Young woman | magluge |
| Brother | wewe, niewakli | People | eneri |
| Sister | tcigero, wawa | Brother-in-law | pani |
| Son | eiugeni, noteri | Sister-in-law | numegwenagero |
| Daughter | hitciciu, sitco | Male | gitgi |
| Child, <i>m.</i> | mteri | Female | sitcu |
| Child, <i>f.</i> | senahi | | |



Piro woman's skirt, and men's bags for carrying various articles. (About 1/8.)

PARTS OF THE BODY

| | | | |
|-----------|--------------|--------------|-----------------|
| Body | imane | Back | kaspa, tcihispa |
| Flesh | egete | Side | sereta |
| Skin | fuemta | Breast | witene |
| Head | wiciwita | Chest | westa |
| Hair | wiciuite | Abdomen | weskota |
| Grey hair | klatgi eneri | Buttock | pukpala |
| Face | wehuci | Arm | wiganoh |
| Forehead | wehirota | Elbow | witzugiere |
| Beard | wesapto | Hand | wimioh |
| Chin | wakota | Palm | tcirete |
| Eye | wihada | Finger | seregiere |
| Eyebrow | wesavereha | Thumb | serehuimeyungie |
| Eyelash | wiceptatci | Index finger | satibtce |
| Ear | wihepe | Leg | wetapate |
| Nose | wihiri | Knee | wisoh |
| Mouth | wiihi | Foot | wihitce |
| Lips | wespe | Sole of foot | igitci |
| Teeth | weigi | Heart | wagi |
| Eye tooth | higesta | Blood | girari |
| Tongue | wena | Stomach | wesata |
| Neck | weprahe | Intestines | retckape |
| Throat | wenugi | Brain | ratcitca |
| Shoulder | witanae | | |

NUMERALS

| | | | |
|----|------------------|----|-----------------------|
| 1 | setepgie | 11 | sati |
| 2 | epi | 12 | miumaka |
| 3 | mapa | 20 | epimolie |
| 4 | epikutcaamukugie | 30 | mapamolie |
| 5 | serigieri | 40 | epikutcaamukugiemolie |
| 6 | paseritamiyo | 50 | serigierimolie |
| 7 | yokepi | 60 | paseritamigomolie |
| 8 | anikaigiagieri | 70 | yokepimolie |
| 9 | unterigie | 80 | anikargiagierimolie |
| 10 | pamolie | 90 | unterigiemolie |

COLLECTIVE AND FRACTIONAL NUMERALS

| | | | |
|--------------|-------------|------------|-----------|
| First | muetcinani | A pair | putali |
| Single | satopgiati | One half | sukaqueli |
| Double | soprigieri | A half day | temanani |
| Another time | pizalkapewa | | |

PERSONAL PRONOUNS

| | | | |
|---------------|-------|-----------------|---------|
| I | ita | We, <i>f.</i> | wana |
| You | pitci | You | pimbina |
| He | pitca | They, <i>m.</i> | wana |
| She | wali | They, <i>f.</i> | wana |
| We, <i>m.</i> | hitca | | |

RELATIVE PRONOUNS

| | | | |
|-------|---------|----------|-----------|
| Who | klineri | All that | ipigineri |
| Which | katte | | |

INTERROGATIVE PRONOUNS

| | | | |
|-------------------|-----------|--------------------|--------------|
| What is that? | klinedna? | Who is that man? | klewakina? |
| What did you say? | itcena? | Whose dog is that? | kateni kevi? |

INDEFINITE ADJECTIVE PRONOUNS

| | | | |
|------------------|------------|----------------|-------------|
| Some | pimerina | All, <i>m.</i> | tuhiurineko |
| Nobody | ikiami | Same | walekla |
| Nothing | ikieni | Both | apina |
| Much | hitcolero | Other | sato |
| Little | sotsotagi | Thing | klini |
| Every, <i>m.</i> | pegeneriko | | |

USE OF POSSESSIVE ADJECTIVES

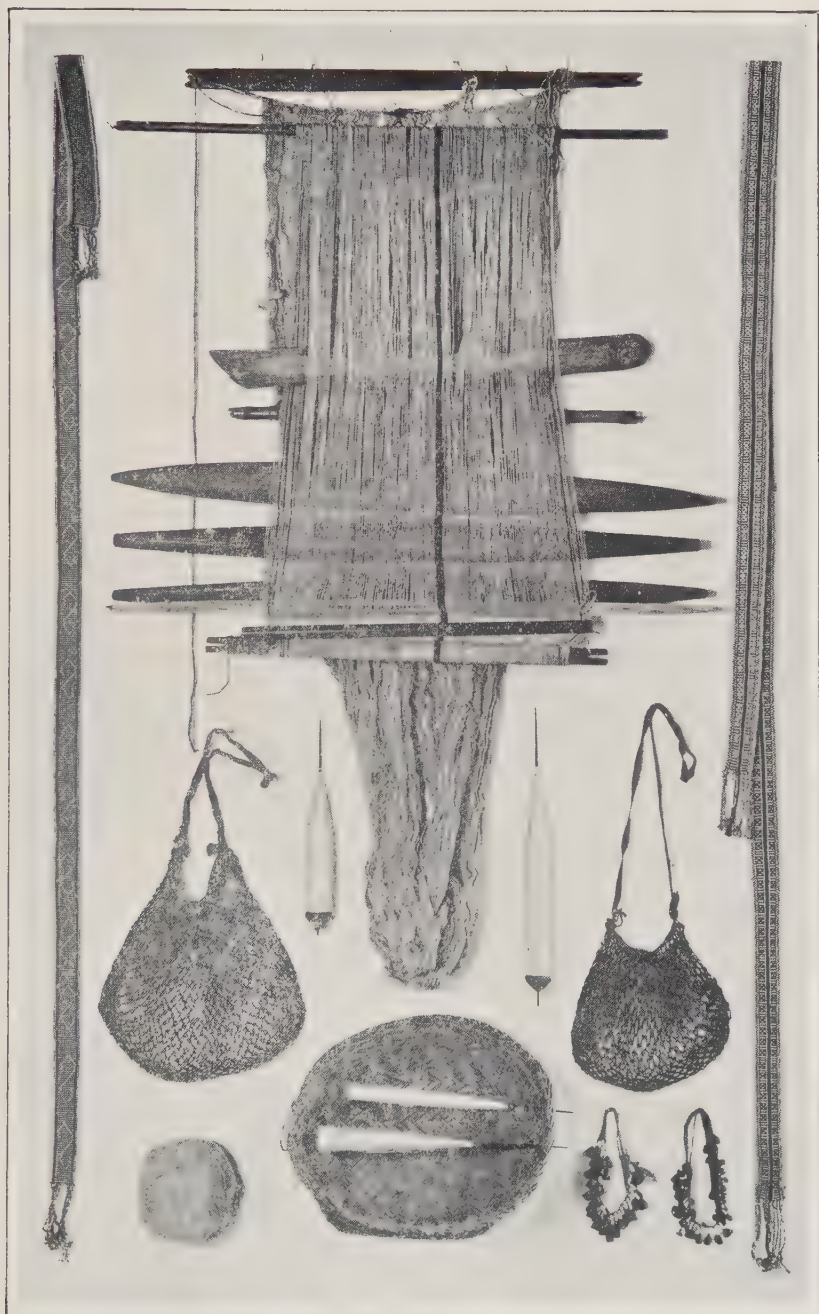
| | | | |
|-------------|----------------|------------|-------------|
| My father | neri, ita papa | My cousin | nemolina |
| My mother | nendola | My hand | nomio |
| Your father | peri | My dog | nopre |
| Your mother | perido | My house | pantci nofi |
| His father | rer | Your house | pantci pefi |
| His mother | rendo | | |

POSSESSIVE ADJECTIVES

| | | | |
|------|----------|-----|-------|
| My | no or ne | His | re |
| Your | pe | Our | witca |

DEMONSTRATIVE ADJECTIVES

| | | | |
|------------------|--------------|------------------|---------------|
| This, <i>m.</i> | tcie | These, <i>f.</i> | hualeni |
| This, <i>f.</i> | fue | Which side | fegera sereti |
| That, <i>m.</i> | fegera | This side | tcie sereta |
| That, <i>f.</i> | huari, huali | This man | hebre |
| These, <i>m.</i> | huanua | This woman | hebro |



Piro loom and accessories, woven bands, netted bags, and leg bands with nut pendants. (1/8.)

COMPARISON

| | | | |
|--------|-------------------|---------|-----------|
| Good | hinghileri | More | mahata |
| Better | hinghileri | Most | mahata |
| Best | hinghileri | Little | ukepineko |
| Bad | unhinghileri | Less | hepeko |
| Worse | unhinghileri | Least | hepeko |
| Worst | unhinghileri | Tall | tano |
| Sour | kapsali, katcueri | Tallest | tanpoti |
| Much | koleri | | |

ADVERBS

| | | | |
|-------|-----------|-----------------|-------------|
| Here | evi | There (distant) | teka, bakka |
| There | koniti | I am here | eviuna |
| Much | hitcolero | | |

SPINNING AND WEAVING

| | | | |
|---------------------|-----------------|-------------------|-----------------|
| Loom | sakspalitsa | Batten (black) | kirthri |
| To weave | wasiri | Warp string | yamonotsali |
| Woven cloth | himta, mkatseri | To spin | tcibetewa |
| Warp | hitsa | Thread | wapgetsa |
| Woof | impta | Spindlewhorl | wahye |
| Heddle | katsuli | Spindle | hihye, tcibegio |
| End stick (largest) | sakalya | Whorl | hiparo |
| End stick | hiihik | Spindlewhorl with | |
| Reeds at end | yotalaila | thread on | hipowa |
| Shuttle | hihitcepihi | Cotton beater | hipanopihye |
| Spreader reed | katali | Cotton | wapge |
| Batten (white) | sakspalawapi | To sew | pintcamkatiwa |

BOW AND ARROW

| | | | |
|--------------|-----------|-------------------|----------|
| Bow | kaciritoa | Point (bamboo) | keri |
| Back | kiri | Feathers | himexi |
| Belly | sisateri | Knock | wafinsa |
| Arm | iseno | Arrow for fish | palahagi |
| String | yokaritsa | Arrow for pigs | kiri |
| Arrow | kaciri | Arrow for monkeys | katsali |
| Shaft (cane) | ahahi | | |

MEALS

| | | | |
|-----------|------------|---------------------|-----------------|
| Breakfast | yetsikawa | Nourishment | niktei |
| Dinner | temakana | To nourish | nikteiplnahieri |
| Supper | winikana | To take nourishment | pimia |
| To eat | pinigiehua | To drink | puerani |
| Food | niktei | | |

PHASES OF THE MOON

| | | | |
|----------|------------|-----------|-----------------|
| Moon | siri, sere | Full moon | sereputekalelka |
| New moon | aruteksere | | |

DIVISIONS OF TIME

| | | | |
|--------|--------------------|------------|-----------------------|
| Spring | hinapu | Tomorrow | yatcikawa |
| Summer | walapu, emerikteli | Yesterday | kapethugeni |
| Winter | hanati | Year | walape |
| Day | hugeni | Last night | kapethugeni kainu |
| Night | uyatsunukai | Day after | |
| Today | tcawahugeni | tomorrow | yatcikawa penethugeni |

CARDINAL POINTS

| | | | |
|-----------|-------------------|-----------|-------------------|
| North | pasereta | Southeast | sohikatci |
| Northwest | pasereta paptox | East | katchihespakioga |
| West | hihorokiwakikatci | | retcpagatca katci |
| | gigetuhatca katci | Northeast | paptoxi katci |
| Southwest | sohi tcarati | Zenith | danox |
| South | tcarati | Nadir | tchi |

SALUTATIONS

| | | | |
|--------------|-------------------------|--------------------|-----------------|
| How are you? | luigitei pitckai pitca? | What is your name? | kliwaque pitca? |
|--------------|-------------------------|--------------------|-----------------|

ANIMALS

| | | | |
|----------------------|---------------|-------------------|-----------------|
| Monkey (small) | nikali | Ant (large black) | kanagi |
| Monkey (large black) | mtciri | Bee | urmomana |
| Monkey (red) | kina | Anaconda | mabahera |
| Jaguar | mwakenutc | Fish | tcima, taperipa |
| Dog | kebi | Wasp | sani |
| Cat | cema | Worm | imenetskaha |
| Tapir | tciamas | Spider | puitsanna |
| Peccary | miditci | Tarantula | sinankankara |
| Wangana | hinarli | Snail | iunualagi |
| Hog (domestic) | kutci | Snail (large) | gitciri |
| Hog (wild) | iyali | Woodlouse | luini |
| Deer | teuteri | Turtle | serapi |
| Bear | icingitaciegi | Turtle (shell) | serapi nagi |
| Squirrel | iupitciri | Terrapin | inkunapalu |
| Manatee | pizkli | Carapata | waseynata |
| Ronsoco | ipeti | Maggot | sumi |
| Fly (black) | giero | Lizard | tcigi |
| Fly (white) | atcikata | Locust | ketsi |
| Butterfly | kakato | Bat | tcio |
| Ant | pukagi | Toad | yotero |
| Ant (red) | samkagi | | |

BIRDS

| | | | |
|--------|----------|---------|----------------|
| Bird | kucici | Cock | tcanripa giegi |
| Parrot | zabeli | Heron | sagimageri |
| Duck | uptce | Macaw | pinteru |
| Turkey | kanati | Vulture | keripakha |
| Hen | tcanripa | Eagle | patca |

PLANTS

| | | | |
|---------------|--------------|-------------|-----------------------|
| Corn | teigi | Balsa wood | mapala |
| Carrots | gipali | Palo Santo | hukli |
| Yucca | teimeka | Log (balsa) | ahamuana |
| Bean | poroto | Leaf | seri |
| Cane | putewak kerí | Fronde | katcikulu pastakapana |
| Cane (wild) | katkeleksi | Flower | katkali |
| Tobacco | iri | Fruit | eginegi |
| Plantain | paranta | Root | etske |
| Cacao | kanga | Bark | thamta |
| Cinnamon | kaneta | Thorn | kuna |
| Areta | higeperidi | Wax | iururu |
| Cedar | kanawa | Copal | zempa |
| Palm (chonta) | iniri | Rush | kamalegi |
| Heart of palm | teitciritci | Cotton | wapge |
| Forest | teiya | Pepper | humuli |
| Tree | thamiuena | Pumpkin | sulia |

NAMES OF COLORS

| | | | |
|-------|---------|---------|-----------|
| White | klatali | Yellow | apina |
| Black | sageri | Orange | pualulu |
| Green | sotsuta | Red | kerutu |
| Blue | angatci | Obscure | mabsahati |

VERBS

| | | | |
|----------|----------------|------------|---------------|
| Able | nemkateli | Agree | pulekatere |
| Absent | iranayatka | Aim | wamereteri |
| Abuse | kacerigieri | Appear | puegewa |
| Accept | nemerabandi | Appreciate | pugwiveniteri |
| Accord | puismikanto | Apprehend | puemakageri |
| Accuse | pineneageri | Approach | puatspanutawa |
| Accustom | nipenanakka | Arrive | ayatcewa |
| Admire | muirayapikandi | Ashamed | patenatena |
| Advise | puikutandi | Ask | wepumgeri |
| Affirm | atcipenekanto | Attack | mankateri |
| Agonize | ripapani | Attenuate | puihuruturde |

| | | | |
|---------------------------|-----------------------|-------------|--------------------|
| Balance | gitwatgireri | Cook | puenkateri |
| Be | pitckalege | Cool | katckleritewa |
| Beat | piugitewa | Count | piantateri |
| Beg | panigeteri | Counsel | neneteri |
| Begin | inewakagieri | Cover | sapriigieri |
| Behave | panigei | Crawl | pukuseteri |
| Bend | sagirikli | Crowd | saliakagiewa |
| Bite | paskateri | Cry | pisaplugiatwa |
| Blame | walmutegewa | Cure | kacupalateri |
| Bleach | wemtakanatkali | Cut | mtapewa |
| Bleed | uhuluteri | Dance | nemtiwanipa |
| Blow | puepunutewa | Decorate | puserenatkali |
| Boil | piwalateri | Deface | ektetekamaretanti |
| Bore | piomugieri | Deliberate | pukiganetano |
| Bring | penegienu | Deliver | watcpakawageneta |
| Brush | puwiateri | Depart | wetcpatgiewa |
| Build | ipanuatawa | Die | wapananatgiewa |
| Burn | palahanerikanopatandi | Dig | pigituggewa |
| Bury | pikapanateri | Diminish | psotsotagipidwasli |
| Buy | panigiteri | Disappear | pamhanatha |
| Calk | piusiteru | Disappoint | kapunatanti |
| Call | tunsateri | Disturb | pakutgitceri |
| Calm | puemitcinuateri | Divide | psogiptcandi |
| Came | renani | Dream | wepunawata |
| Capture | saliageri | Dress | psaprerigiri |
| Carry | panikandi | Drink | puerani |
| Carry (with tump-line) | panikasateri | Dry | puepserekageri |
| Castrate | restakatgeri | Eat | pinigiewa |
| Catch | puatgieri | Enclose | pirigiriteri |
| Cease | wanekutka | Enter | gigalugeawha |
| Change | satkapageri | Embrace | kakanehwetando |
| Chase | puenkaptcua | Escape | pasigiewa |
| Chew | pinigierenixi | Explain | piimageri |
| Choke | ribeatnutka | Extinguish | putcuageri |
| Clear | yunkapenwa | Extract | kutcpageri |
| Coagulate | pigithahali | Fail | mahataka |
| Comb | intkakagieri | Fall | yuananagieri |
| Come | wenanigiewa | Fall asleep | pukukalemei |
| Commence | iniwakagiene | Fan | puapunutena |
| Conclude | palitcageri | Fasten | pikpateri |
| Confront | pioputeri | Fasting | hitcahugeni |
| Conserve | enemsakagiewa | Favor | pitcageri |
| Consume | ritcpahanatkali | Fear | pigiewa |
| Construct | ipanuatawa | Feed | nikleipenehieri |
| Contain | puyahuta | Ferment | piawulkagewa |
| Contradict | papaniteri | Fill | katsapateri |
| | | Find | wetcakageri |

| | | | |
|------------|----------------|-----------|-----------------------|
| Finish | nikanantca | Intercede | panikamteri |
| Fire | namanato | Jest | kalirigieri |
| Fish | kotcuhatawa | Join | pioptutere |
| Flatten | puigicewa | Jump | ptalesutewa |
| Fling | wekunugieri | Kill | inkanateri |
| Fly | pamamta | Kiss | pamaletari |
| Float | sagiririkle | Kneel | piyubsuyitewa |
| Fold | yunanageri | Knot | postageri |
| Forget | rasikatka | Know | wemateri |
| Free | maitcaweli | Labor | kiapareri |
| Frighten | pika | Laugh | wetsologiwatewa |
| Gather | pianimatawa | Lead | pindukwewa |
| Give | penegeri | Leak | psagigwa |
| Glow | tcitciupgeri | Leave | wanankai |
| Go | ayeri | Lengthen | walapitcanti |
| Gone | nianitci | Level | kutcageri |
| Grasp | puestaganti | Liberate | rasigiewa |
| Grease | kirenathalaga | Lick | pameruteri |
| Grind | pinigicewa | Lie | payaluklawata |
| Groan | tciahatewa | Lifeless | repantke |
| Grow | kretkalanu | Lift | peopkateri |
| Hang | puiteripatena | Load | puetgiteri |
| Harvest | pukasitcandi | Lock | puisiateri |
| Hatch | saprerigieri | Look | peteri |
| Hate | pigegakanteri | Loosen | pikuserigieri |
| Haul | kosata | Lose | ipenkakandi |
| Have | waneri | Love | palikli |
| Heal | wetskatagewa | Lower | mala |
| Heap | muleteri | Make | pikamerateri |
| Hear | igenakukawa | Make fire | pitsuama |
| Heat | remelena | Mark | kwerika |
| Heed | pigerenteri | Marry | ianiriwatawa |
| Help | pipshageri | Mask | kayewa |
| Hide | piogimateri | Match | puegelpuka |
| Hinder | wemalateri | Measure | piahuteri |
| Howl | kumekuleri | Meet | pitcihalaemtani |
| Humble | gigekanoata | Mistake | igepenagueri |
| Hunting | riolikayatka | Mix | pioppetore |
| Hurl | puekunugeri | Moisten | aati |
| Hurt | iuhulutawa | Mortify | sopirigieri |
| Hurry | mutciawa | Move | ayewa |
| Imagine | kancirunatkali | Mourn | tciahatewa |
| Increase | pitcutenakante | Nourish | pimia |
| Intoxicate | puemetakagieri | Obscure | puwemtagieri |
| Imitate | wemtapatgeri | Offend | pigekakli |
| Inform | kiatcaparere | Offer | pinegeri |
| Inquire | pupumahaperi | Open | kucirigandewiciatandi |

| | | | |
|----------|------------------|-----------------|-----------------|
| Owe | pidibiwatci | Shame | pateteri |
| Paddle | kosete | Shelter | lapirigiahwa |
| Pain | kateindi | Shoot | puemkahateri |
| Paint | pionateri | Show | pakatgeteri |
| Pass | saluatewa | Sift | saihugiteri |
| Passing | repanatka | Sing | tcikaluretewa |
| Pierce | piomugueri | Skin | pigispugieri |
| Pity | nuamunerata | Sleep | puemegwa |
| Plant | wetaheri | Slap | puerlageri |
| Play | piamwatewa | Slide | rasegieri |
| Polish | tcitciatandi | Smell | winipa |
| Pour | supreatkali | Spit | puatskawa |
| Present | pikigelelukageri | Soften | pubtciriteri |
| Prop | piwustateri | Speak | wanberi |
| Protect | piwemerateri | Stand | famatewa |
| Punish | kastigateri | Steal | kacungeri |
| Pursue | puyahida | Stop | pakutci |
| Put | witageri | Stoop | pepuyuguawa |
| Reach | saplangatawa | Strain | saihugiteri |
| Receive | watgieri | Strike | piahutcakiewa |
| Recover | itcutkali | Suck | tcipuleneli |
| Reduce | tototando | Suckle | tcutcupanageri |
| Relax | kucirigandi | Sunburn | panugeri |
| Remove | kateni | Supply | pwyanlageritci |
| Repair | palitcageri | Sweep | satceritcewa |
| Repent | puamunenata | Swim | nanuhawa |
| Resist | wetcwamtewa | Take | wadgieri |
| Respect | pameteteri | Taste | petemgeri |
| Rest | papananitawa | Terrify | puwemiogeri |
| Rejoice | metcuata | Thin | kerinatcai |
| Reward | puyenateri | Think | wisenigoeri |
| Rise | kerinathala | Throw | puekunugiri |
| Rising | maharliwato | Tie | postateri |
| Roast | pigamateri | Torment | paentcingaigeri |
| Rob | pitcukateri | Touch | tcasitceri |
| Rot | ritcpawatkali | Trade | panigiteri |
| Rub | satceritcewa | Turn | kerenathalai |
| Run | pianetka | Twist | saperitsatewa |
| Said | puikustewa | Understand | puemateri |
| Say | waneptcina | Unite | wakutsiregieri |
| Scream | saklanketawa | Untie | wesuteri |
| See | pateri | Vomit | tapleritawa |
| Seek | puekegieri | Wait | etcwakaka |
| Send | tuetleli | Walk | pasekamtena |
| Separate | wacerayani | Walk (on trail) | pukusehamena |
| Set fire | witcigieri | Want | ikwatkani |
| Sew | biutsa | Wash | kanaapewa |

| | | | |
|--------|-----------------|---------|----------------|
| Watch | atcwakageri | Wish | nalekli |
| Waylay | peteri | Wither | yatcawa |
| Weaken | puemiwatka | Worship | pameletanti |
| Weep | satecirtcawa | Wrap up | saperitceri |
| Whet | pugewanatanti | Yawn | ramptionabkali |
| Whip | pukutciptiateri | | |

ADDITIONAL WORDS

| | | | |
|-----------------------------|------------------|----------------|----------------|
| Abdomen | wesati | Bark (dog) | thamta |
| Abominable | ekatete | Bark (tree) | pitcitca |
| About | kwageli | Basket | kogita |
| Above | awaka | Battle | puekumukandi |
| Abroad | malekapiani | Beach | zati |
| Absolutely | peginarekotoriko | Bead | teheweti |
| Achote (plant for paint) | apigeri | Beads (string) | wapitci |
| Admiration | sihi | Beard | wesopto |
| Advance | putenani | Beautiful | kwigeleri |
| Adze | eptce | Beast | nikali |
| Affectionate | vendi | Bed | tcieteigeriko |
| Afterward | penithugeni | Before | muenikana |
| Agreeable | kinhalero | Below | mala |
| All | siyuka | Belt | tcumbi |
| Alone | walepgiali | Besides | ruyu |
| Always | wanekla | Bitter | samentcekpsali |
| Ancient | toro | Blind | mitcawa |
| Anger | remtewana | Blood | gerari |
| Animal | nikali | Blunt | hatendi |
| Antique | muetcikauniputi | Body | imani |
| Aperture | repukanata | Bog | kaspa |
| Areta (plant) | hegeperidi | Boldness | mterihuni |
| Ashes | tcitcipagi | Bone | hipapua |
| Assassin | pualagiri | Bottom | aintcegi |
| Assent | pieutageri | Bowl | kapurali |
| Attention | igenakutena | Box | pologi |
| Avaricious | katciperi | Boyish | kobiti |
| Axe | katate | Brains | ratcitca |
| Backward | katco | Branch | wekano |
| Bad | ikwigelero | Brave | renlawana |
| Bag | keri | Breath | papananitewa |
| Bait | ritheg | Breeches | hitcaragia |
| Bald | paginetena | Bridge | kunkakigea |
| Balsa | mapala | Bright | itenti |
| Band | tcumpi | Brilliant | kalagiri |
| Bandage | biliawakawa | Broth | iha |
| Barbed | rendikayatka | Brush | pupulubandi |
| | | Bundle | posteteli |

| | | | |
|---------------|-----------------|-------------|-----------------|
| Button | fostegi | Creature | mteri |
| Cabin | yotero | Crude | erupti |
| Cage | teawa | Cruel | eetete |
| Camp | sana | Cup | sulia |
| Cane | kanugeriri | Cushma | ikanopi |
| Cane (wild) | kogihaci | Custom | piwapukineri |
| Canoe | kanawa | Dance | pausatiwa |
| Care | tcako | Danger | ilakakli |
| Cause | tcenani | Dawn | ratcpa hugini |
| Cave | siephepli | Daytime | ingeni |
| Cavity | wenama | Dead | ripananatka |
| Certainly | klikakli | Dear | hitcolero |
| Chain | iuematsa | Debt | palikli |
| Chance | heritca | Decoration | apihaieri |
| Charcoal | tcitcisiri | Deep | fenhali |
| Cheerful | nikatharo | Descent | twesitnatka |
| Chicha | kuya | Ditch | mitayo |
| Chief | wigiwi | Discouraged | iwagiwati |
| Chief's name | klineriwakipiya | Dish | sorotci |
| Chonta (palm) | iniri | Distant | wasera |
| Chop | pakastagieri | Ditch | tubskata |
| Clay | mapo | Door | ibapto |
| Clearing | sana | Doubtless | triakle |
| Clever | kwigelero | Down | aklapulini |
| Cloak | hitcarata | Dress | katseri |
| Close | aviku | Drunk | rimeta |
| Cluck | kaputa | Dust | pagi |
| Coal of fire | tcitci | Each | kada |
| Coarse | yugepi | Each one | kadahisiwi |
| Coat | kutcpakandi | Early | uyatsunukawa |
| Comb | tceri | Earth | huge |
| Cook | ralitcandi nixi | Edge | spueta |
| Comfort | meiwala | Egg | fonaki |
| Common | paginirinekopla | Enclosure | tcieputeku |
| Companion | nimotsolai | End | mkatataro |
| Conceal | pateri | Enemy | kaminitcieri |
| Consent | ralekli | Enough | palitcagieri |
| Consumed | retcpahanatka | Entire | pegineriko |
| Content | meiwatena | Equal | kwigali |
| Convey | piokanateri | Estuary | iswitha |
| Cord | yuketsa | Even | ginando |
| Corn | tcigi | Evil | kantci |
| Corpse | ripanaatea | Everywhere | puenemeneriakla |
| Cotton | wapge | Exaggerate | vendiputenani |
| Coward | mareti | Excuse | palmata |
| Crab | yotero | Fan | tigenetpui |
| Crazy | tcinikaneli | Far | wastcira |

| | | | |
|----------------|---------------------|--------------------|---------------|
| Farm | sana | Handle | igiepi |
| Fast | hetceri | Happiness | puekuatewa |
| Fat | putenani | Hard | ciklu |
| Fat, <i>n.</i> | retuigi | Harpoon | tcukurigeri |
| Fault | mekutsuri | Hat | sagietpua |
| Favor | pipehageanu | He | wali |
| Fear | pikagiawa | Health | itcutkali |
| Feather | imegi | Hearing, <i>n.</i> | wegepi |
| Fetters | wima | Heat | evi |
| Few | sotsotagi | Hers | fo |
| Fierce | kuali | Hide | fuemta |
| Finally | nikatatcali | High | fenu |
| Fine | kwakeleri | Hill | mango |
| Fireside | tcitcisi | Hill-top | wesanariha |
| Firewood | tcitci | His | ha |
| Fishhook | yumuegi | Hole | sapwa |
| Flame | kari | Honey | ururapa |
| Flat | entagati | Hot | emeta, emeri |
| Flexible | merete | Horn | wekapa |
| Floor | naratika | House | pantci |
| Fog | ciarka | How | ipitcatiti |
| Following | iroyiani | Humor | pasigiewa |
| Forest | inkwainisi | Hunger | nateinatkali |
| Fresh | okiadiida | Hungry | natecnatkani |
| Friend | namegwini | Hut | mteripantci |
| From | ageri | I | ita |
| Full | kenandi | Ice | kateikleri |
| Fuzz | wisakegia | Immediately | ayawatci |
| Gain | hitcka | Impossible | epkamerethuli |
| Gay | yuku | In | egi |
| Gaudy | eraba | Inferior | patenosa |
| Gently | ahikelaklu | Information | puenkagenu |
| Ghost | nzamena | Island | kaneprekli |
| Glance | reyepi | Joy | kwigeletweno |
| Go | piata | Judge | rektcikali |
| Gold | thrusti | Jug | irapi |
| Good | kwigelero | Justice | kanugereri |
| Gone | napukani | Kind | satikla |
| Grand | kerini | Kindness | powakate |
| Group | putanani | Ladder | unkalegea |
| Grove | tciyi | Lame | hitcuri |
| Gum | pukigiti | Large | keri |
| Habit | nekameriwaklatatano | Late | kai |
| Hairy | wigeuktsa | Lean | puemnu |
| Hall | kerehata | Lie, <i>n.</i> | kayalukeri |
| Hammer | hitcelaipi | Lifeless | repanantka |
| Hammock | tcietci | Litter | puentankuteri |

| | | | |
|--------------|-----------------|------------------|---------------|
| Little | iwikle | Opposite | wakani |
| Load | pukanaptcua | Other | pasereta |
| Long | wekla | Ourselves | witca |
| Loss | kwevi | Over | ryu |
| Low | patenosa | Overhead | tuakanonaka |
| Maker | kameretua | Paddle | saluhapi |
| Male | aneri | Paint, <i>n.</i> | wiyona |
| Mankind | eneri | Painted | kayunali |
| Mat | satcemta | Pan | yomugeri |
| Meat | igeti | Paper | kirika |
| Medicine | katsupali | Passion | panakawa |
| Menstruation | temteha | Past | pukao |
| Merry | keneri | Pepper | kumuli |
| Middle | sukakeli | Perhaps | kasitciri |
| Milk | tcukba | Piece | wastageri |
| Mine | wita | Pitcher | akbagi |
| Mirror | aniafi | Place | inigelawaka |
| More | sato | Plantain | paranta |
| Moreover | patetci | Plate | paranta |
| Mouthful | yubika | Platter | sirotce |
| Mud | ka'ali | Play | sepate |
| Much | itcolena | Plead | paniugenteri |
| My | no | Pocket | zapa |
| Naked | mamkati | Poison | katcinahaspa |
| Nail | itcegi, fostagi | Pole | ahamuana |
| Name | genaka | Pound | penigetciwa |
| Narrow | etserero | Poor | meganenkatati |
| Nausea | piusa | Pot | kulpeta imati |
| Near | hitcanegwini | Power | wemkatali |
| Nearby | tciapulaku | Preparation | pasigitcwa |
| Nearly | itcaweweri | Proprietor | kaihari |
| Needle | sapui | Quick | iamputi |
| Nest | kusitci | Quickly | yamputi |
| Never | ikiepahugeni | Rafters | ikwansata |
| New | eruti | Rag | puserimkali |
| New Year | waleruti | Rain | hina |
| Nickname | yukegiwaea | Rainbow | tcí |
| No | ikia | Rather | wetcinani |
| Nothing | malasa | Ready | tcenahute |
| Nourishment | niktci | Relative | numuli |
| Now | tcawawiwi | Resin | itcali |
| Never | pahugeni | Restless | ipugahuta |
| Occasion | pakatgi | Right | putekli |
| Occiput | haknugi | Rind | thamta |
| Odor | rasekata | Ring | pirigieri |
| Old | bere | River | seriha |
| Opening | fenhali | Roast meat | pulutere |

| | | | |
|---------------|---------------|---------------------|-----------------|
| Rough | ipubtceri | Some | pimerina |
| Rubber | pegi | Somehow | imagui |
| Rule | fuetana | Song | tcikali |
| Sad | puesinika | Soul | usamena |
| Salt | tewi | Sour | kapsalikatcueri |
| Same | waliku | Spirit | kakwali |
| Sand | fsatte | Stake | pitcpap |
| Sap | ihaha | Star | kakgere |
| Satisfactory | rapoohanta | Stem | maserati |
| Scalp | wimta | Stick | hukli |
| Scarcely | yumatei | Still water | ipaha |
| Seal | keria | Stink | pusi |
| Seat | pteplali | Stone | sutli |
| Secret | puetcirukandi | Stool | tepleli |
| Secure | wali | Stop | atcenakaka |
| Sensible | iukletsa | Straight | ethero |
| Settlement | keripubtci | Strong | itculi |
| Shade | katciklawaka | Struggle, <i>n.</i> | kwyā |
| Shame | patwata | Stubborn | kamenitciri |
| Shelter | emagiitceri | Suck | hirini |
| Shell | soluta | Suitable | makli |
| Shirt | kanopi | Summit | fenu |
| Short | tcinehuti | Sun | katci |
| Shotgun | tcitciesi | Support | tcineri |
| Shoulder | puethana | Surround | pirigeri |
| Shut | empaleti | Swiftly | tcineyuti |
| Sickly | pawatanto | Syrup | putcuakerespa |
| Sickness | kapuhali | Tail | funtci |
| Side | wakani | Tall | bamiputi |
| Sidewise | sereta | Teacher | imakandi |
| Sieve | sihoyi | Tears | wegwileha |
| Silent | puetcerugiema | Then | wanegweni |
| Since | agieri | There | bekka |
| Skeleton | inskaguli | Therefore | iguigeli |
| Skirt | emkatceri | They | hoapa |
| Skirt (black) | katcirinama | Thirsty | nerenano |
| Skull | ratcitca | This | fegera |
| Sky | tawaka | Thither | beka |
| Slander | heyalahilyeka | Thong | kutcikiateri |
| Slap | wata | Thorn | sutci |
| Sleep | wepunawata | Through | ituku |
| Sleeping | remka | Time | satkapewa |
| Slowly | ahigelaklu | To | tcapla |
| Smoke | nontcitcani | Tobacco | iri, idi |
| Snuff-taker | kolipa | Together | pawakalinaki |
| So | triakli | Too much | ikwiglari |
| Soap | mukatecutara | Town | pubtci |

| | | | |
|------------|----------------|-----------|----------------|
| Trail | aterihapu | When | hikli |
| Trick | wagerota | Whence | hetispukuta |
| Trunk | pologi | Where | wakwapcani |
| Tube | huaka | Wherever | inuawini |
| Tump-line | appta | Which | kleneri |
| Twilight | yatzukawa | Why | iritcilenegi |
| Twins | tetepakakugeni | Wide | kerira |
| Twist | psatkapewa | Wind | hanati |
| Ugly | ekata | Wing | imegi |
| Unborn | katicikleri | Wisely | ritcinikwili |
| Underneath | mala | Witch | kahuntci |
| Unequal | iputekli | With | ima |
| Upward | tuaka | Within | itoko |
| Useful | kwanaseri | Without | pwotcpageri |
| Useless | mohareli | Wood | ahamuana |
| Valuable | ikatciperi | Wool | imegi |
| Very | putenani | Worn-out | keri |
| Vicious | putenane | Worse | aktataputenani |
| Vine | sapi | Worth | hikiepiwi |
| Waist | wiptcigi | Worthless | ibeila |
| Warm | puenkuka | Wound | katinuru |
| Waterfall | kafuhali | Year | inewakatka |
| Wax | iururu | Yes | ehe, ewa |
| Weapon | hahali | Yet | ikwiegwa |
| Wedge | remaleteli | You | puapa |
| Well | huigelero | Your | ne |
| Wet | hanatkali | Yours | pua |

MASHCO

Distribution and General Culture. The Mashco, Moeno, or Sirineiri, as they are called by their surrounding neighbors, believe themselves to be related to the Piro. It is a small tribe, and occupies the territory on the south of the Manu River, between the Sutlija and upper Madre de Dios Rivers. The Mashco live along the rivers, two or three families together in one house, with other houses a short distance away. They often have their fields in a common clearing. Their houses are of the common type built of poles, and covered with leaves. While they have their fields together, each family has its own section. The men hunt together, and divide their catch equally among the families. The men wear cotton cushmas, and the women wear short cotton skirts. They paint their faces, hands, and feet for protection from insects, as is common among all the tribes in the region. They wear anklets, and arm and leg bands, but do not mutilate the body in any form. They make very good pottery. They are the only Indians left in the region who continue to make and use stone axes.

Marriage. In their marriage relations, they are not as strict as some of the other tribes, for they often marry Campa or Piro. The present chief is a Piro who married a Mashco woman.

The Dead. They wrap the body together with all its belongings in a cushma, and bury it in a sand bar along the banks of the river; even a man's dogs are killed and buried with him. All members of the family paint their faces black, and spend one day and night in weeping. The body is carried to the grave by two men, the whole tribe going along. No marker is used, and the next high water obliterates all traces of the burial.

Personal Appearance. The Mashco were known first through the Campa, who had been in the habit of capturing the Mashco for servants. The Mashco are larger than the Campa, and darker in color than the other tribes about them. They are also taller and longer headed. The head measurements of the only one I was able to measure were: length, 187 mm., and breadth, 142 mm., giving a cephalic index of 75.94.

My information about the Mashco was obtained from Sr. Baldomero Rodriguez, who lived in their immediate neighborhood, and had many of them in his employ. I made a long journey

to visit the tribe, but upon arriving at their river, learned they had gone away, no one knew where. After waiting for three weeks and despairing of their return, I was compelled to leave without seeing them.

Vocabulary.

| | | | |
|----------------|-----------|------------------|------------|
| All | ondupa | Pay | amambisbis |
| Bad | yakulueni | Peccary | ote |
| Body | nono | Pineapple | ihina |
| Brother | yeyi | Plantain | apati |
| Cause | kesepe | Poweel (bird) | kwelye |
| Come | ena | Pot | tcerokutho |
| Corn | hiuje | Rifle | amatcipoto |
| Cup | tcinomopa | Saber | itcapalo |
| Drink | kuthkotai | Sleep | titi |
| Driver | ekuli | Snake | embi |
| Eat | yembapeta | Stream | umai |
| Good | bivi | Sun | ne |
| House | kitcäpo | Surge | tcaraba |
| Little | bapana | Tapir | siema |
| Lizard | due | Two | gundupa |
| Many | wandupa | Three | gundupa |
| Moon | thin | Turkey | pano |
| Monkey | tcure | Turtle | petha |
| Monkey (black) | sue | Uncle | kokoa |
| Move | mbui | Until | kanopoki |
| Much | wandupa | Wangana (animal) | ndieri |
| Night | ne | Woman | buavi |
| One | ruña | Yucca | tai |

PANOAN STOCK

History. The first missionaries from Lima who crossed the Andes to the upper Amazon River found a number of related tribes speaking dialects of the same language; they gave the name of the most prominent tribe to the whole stock. That tribe has succumbed long ago to the by-products of European civilization, but its name, Pano, survives. According to their early tradition, the Pano came from some place in the North, near the equator,



FIGURE 6
Cashibo fishing village

and settled about the mouth of the Huallaga River. Here they came into contact with the Yevera, who forced them to move southward into the plains of Sacramento, the region between the Huallaga, Ucayali, and Pachitea Rivers. In time, a half dozen or more tribes were differentiated and established in definite territory of their own: most important of these were the Conebo, Setibo, Sipibo, Cashibo, Remo, and Amahuaca. The missions, first established by Father Juan de Sucero in 1686, later brought Indians from various tribes together in villages. The Indians became dissatisfied, however, largely because diseases introduced by traders were scattered among all the tribes. The people died by thousands, and many tribes disappeared entirely. Marcoy (page 576) says that in the Eighteenth Century, a hundred and twenty-seven

tribes were recorded along the upper Amazon and its tributaries; now only twenty-nine remain. There was a general uprising among the Indians in 1768, the mission stations were destroyed, and many of the missionaries were killed. Of the missions in Peru, which in the middle of the Eighteenth Century numbered nearly one hundred and fifty, only nine remained in 1875. On account of the activity of these early missionaries, the beliefs and customs of all the tribes in that region were so modified that it is impossible today to rebuild their ancient culture. Traditions survive that the Pano had bark paper upon which they kept hieroglyphic records of divisions of the year, dates, and important facts; that they carved idols of their deities; worshipped the sun and fire; and practised the rite of circumcision. These accounts are not well authenticated, and we shall never know what the facts were. The attempts at hieroglyphic writing made for me were not at all successful. No one except the man making the marks could tell what they were, hence I do not reproduce them here.

CONEBO

Distribution. The largest of the Panoan tribes at the present time is the Conebo, which occupies the territory along both sides of the Ucayali River about Cumarea, in latitude 10° south. Formerly the tribe numbered several thousand, but today there are not more than five hundred remaining. They are the Indians most commonly found in the employ of the rubber men all along the river. They say they are brothers of the Inca, and that there is a branch of their tribe called Inca. My best information was obtained from a Conebo man through an educated Macheyenga, Samisiri, as an interpreter, and from Dr. Baldimero Rodriguez, a Spaniard, who had lived many years among the Conebo, and spoke their language well.

At Cahuide we found a Conebo man married to a Macheyenga woman who spoke both Macheyenga and Conebo. By using Samisiri as interpreter, we were able to get a vocabulary and an account of certain Conebo customs and beliefs. The man did not remember his Conebo name. He came from down the Ucayali River where he had been used for several years by rubber gatherers. When his first wife died, he brought his only son to

the Javero River, and married the Macheyenga woman. His wife's Conebo name is Kaiyanovi, and his son's is Waringoci.

The original home of the Conebo tribe, according to the ancient tradition, was around twenty-three small lakes along the Urubamba River, two or three days in canoe below Sepahua, or six days above the mouth of the Tambo. Eleven lakes were on the left of the river and twelve on the right, and all were entered by canoes from the Ucayali through small communicating rivers. Some tribes are still living in this region. The names of the lakes from south to

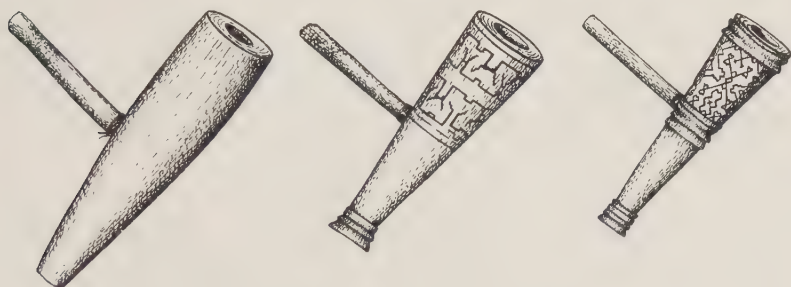


FIGURE 7

Conebo tobacco pipes of wood with stems of bird bone. (2/7.)

north are: Siboya, Ankia, Vinoya, Comairiya, Toboya, Nosotobia, Sawaiya, Aroya, Pasaya, Hanapansia, and Sanpiya on the left; and Sunapavora, Panaosa, Masio, Kako, Amakadia, Sipidia, Sararaya, Ipaiyira, Natoiki, Komangiya, Taoqua, and Pakatca on the right. We passed along this river, but were unable to learn of any such lakes. They were, no doubt, mere bayous, the names of which have been forgotten, and not lakes. There are many of them along the Urubamba and Ucayali Rivers, frequented by the Indian fishermen. Villages are often built on the high banks of these protected bayous.

Houses. The Conebo build quadrangular houses, and orient them north and south. The southern end is left open to the ridge, while the northern end has a circular projection, and is roofed to within four feet of the ground. The roof on the sides of the house extends to within three feet of the ground.

A typical house measures forty-four feet long and twelve feet wide, with six posts five feet high and five inches in diameter on each side. The northern semicircular end, which extended four

feet beyond the square, is supported by two posts. The ridge pole is supported by four forked posts, six inches in diameter and ten feet high. There are no cross ties of any kind, not even at the end of the house. The roof is supported by thirty-four rafters, seventeen on each side, and fourteen laths, seven on each side. The roof is made of long palm leaves, put on with the butt of the frond at the ridge. The leaves of the left side of the frond are bent to the right at an angle of forty-five degrees, and three or four are tied together to the laths in three places. The west roof is put on first, beginning at the northern corner. The east roof is allowed to project eight or ten inches above the west roof. The method of building and roofing the house reveals the fact that the storms come from the north and east. These roofs last for five or six years, when they must be renewed. The poles and roof are all tied on with strips of the bark of the balsa tree (*Cecropia*). This house had three fires, and three large mats, which would indicate that it was occupied by three families. The fires are always just under the roof on the west side, which allows most of the smoke to escape, and also allows the larger logs used for the fire to extend outside. The fire is made of three large logs with ends so placed together that they serve as a tripod for the large cooking pot; if an extra pot is needed another log is placed between two of these. By this means, fire is easily kept, and quickly kindled by the use of small sticks between the large logs. It is an effective and economical method. The Conebo use no hammocks, but sleep, wrapped in their cushmas, on mats on the floor without mattress or head-rest.

Dress and Ornamentation. Conebo men wear plain white, dyed, or painted cotton cloth cushmas and embroidered trousers. They often go without their trousers, which are considered more appropriate for dress occasions. The women wear cotton skirts and shoulder cloaks (plate 11, b). These they usually dye black, and often embroider the skirts. Sometimes, instead of the cloak, they wear a waist with short sleeves. The women gather wild cotton, spin, and weave it. The men's cushmas are often painted by stretching them on the ground, and applying black paint in beautiful geometrical designs with a brush or a strip of bamboo.

Men and women wear long necklaces of seeds or animal teeth; close-fitting necklaces of beads; and bracelets and anklets of woven cotton fringed with hair or teeth. The anklets are sometimes



Conebo Indian pottery vessels. (1/11.)

woven in place. The men also wear around their necks, hanging down their backs, a finely woven band of cotton to which is attached the "utcate," the use of which is described on another page. The men carry with them at all times their trinket bags, which contain their toilet articles and small implements: their tweezers for extracting the beard, a bit of mirror, a comb made of spines split from the chonta palm, fruit of the genipa or a kernel of arnotto for paint, a lump of wax, and a ball of thread for repairing their arrows.

Food Supply. The Conebo have good fields, and grow all the vegetables and fruits common to the tribes of the region, but they are the great fish and turtle eaters of the upper Amazon. It is said that the Conebo are never found where there are not plenty of fish. They prefer fish to game while most of the other tribes prefer game. They use the bow made of chonta palm (*Oreodoxa*), and arrows of wild cane (*Gynerium saccharoides*). The blowgun they obtain by barter from the Jivaro. The harpoon, with toggle head and float of a short piece of balsa wood, would seem to be a native invention. Acuña (page 80) says the Indians of the lower Amazon use harpoons. The harpoon is used to catch the paiche (*Vastus gigas*), which feeds in the quiet water along the bayous. It is a large crimson scaled fish, growing to a length of eight feet. The Indians remove the skin, cut the flesh into large flat slabs, salt it, and hang it out to dry. When properly cared for it will keep for several months. They also catch the sea-cow (*Manatus australis*), and preserve its flesh in the same way. Large turtles are captured when they go out to lay their eggs on the sand bars in the dry season. The men build a blind, or hide in the shadow of some tree on a moon-lit night, until the turtles come out some time after midnight, then rushing from their hiding place they turn them over on their backs, rendering them helpless. The men carry the turtles home, and keep them in pens or artificial ponds until needed for food. The eggs are collected in large numbers, crushed and preserved with salt in earthenware jars for two or three months. Formerly the turtles were fattened and sold to the missions. The egg is half the size of a hen's egg, and very good eating.

Canoes. The Conebo are the best canoe builders in the whole region, but are not better canoemen than the Piro. All their canoes are the regular dugout type, made from the red cedar or

of capironi (*Cedrela odorata*), known as the canoe tree, which grows from three to six feet in diameter, very tall, straight, and free from knots. The largest canoes are forty feet long, four and a half feet wide, and two and a half feet deep. The bow is bluntly pointed, while the stern has a broad flat extension used as a seat for the steersman. Canoes are made without keel, because of the easier handling in rapid waters. The sides are worked down very thin. Although the tree works easily when green, it is hard to split when dry. They formerly burned out the canoe, controlling the fire with wet leaves, but now they use an adze. The canoes are usually plain, but they are sometimes painted in geometrical designs. The paddle is made with great care from capironi, or from the broad flat root of the ohe tree. It is five and three quarters feet long and seven and a half inches wide, painted in elaborate geometrical designs in black.

The Dead. When a man dies he is wrapped in his cushma, and his face, hands, and feet are painted black for burial. His bows and arrows are placed at his side and buried with him, while his canoe is broken to pieces. As the body lies on the floor, the women relatives dance around the corpse, holding up their hands, and singing the song of the dead. The men sit outside the house drinking chicha. At sunset the body is buried in the earth floor of the house, on its back, at full length. Formerly the body was placed in a large jar, sealed, and buried in the floor. When a woman dies, her necklaces and other ornaments are buried with her, and all her cooking utensils are broken. The family continues to live in the house. A widow cuts her hair and weeps at intervals for a time, but there is no other sign of mourning.

Religion. The Conebo believe in a creator, who was once on earth when he made men, animals, plants, mountains, and valleys, but is now in the sky, from whence he watches the actions of men. He is called Otcipapa, or grandfather. They offer him neither homage nor devotion of any kind. They believe in an evil spirit, called Urima, who lives in the earth. All evils are attributed to his influence. They fear him, and refrain from mentioning his name, but address no petitions to him.

Music. The Conebo are not particularly musical, yet they have flutes and Pan's pipes of bamboo joints, which are used by individuals for their own amusement. The music here recorded was heard

sung and whistled by many different persons upon many occasions. No words were used, but the music was hummed in a low voice.



Marriage. The Conebo permit plural marriages, but few men other than the chief have more than one wife. There is no formal marriage ceremony, but the approval of the head-man must first be secured, and then the girl's father must be consulted. After the marriage the man may live with his wife's father, until he clears a field and builds a house. When the marriage has been agreed upon, a fiesta is arranged for a moonlit night. Abundance of intoxicating drink is manufactured for the occasion and all dance and drink freely late into the night. The girl to be married is taken in charge by some older women, and after she has been given drink until she is overcome, they build a platform of split balsa logs, lay the girl upon it, tie her legs apart to two upright poles, and then perform the operation of defloration with a bamboo knife. During this time the others have continued the dance. The girl, when the dance is finished, becomes the man's wife without other ceremony, and takes him to her father's house.

This custom of defloration is common among all the Panoan tribes. Its origin and import are impossible now to determine. Among some tribes an old man performs the operation. The Panoan worship the moon: as the performance takes place at the full of the moon, it is easy to imagine, as some of them do, that the ceremony is in the nature of a sacrifice of virginity to the moon. It is a common saying that the moon makes women of the girls. When you ask a man why the operation is performed, he will either say that he does not know, or that it is a way of letting everybody know the girl is a virgin. Whatever the origin, this public performance would have a powerful influence in stimulating virtue. When asked if a man would take the girl in case the women reported she was not a virgin, they reply that all girls are virtuous.

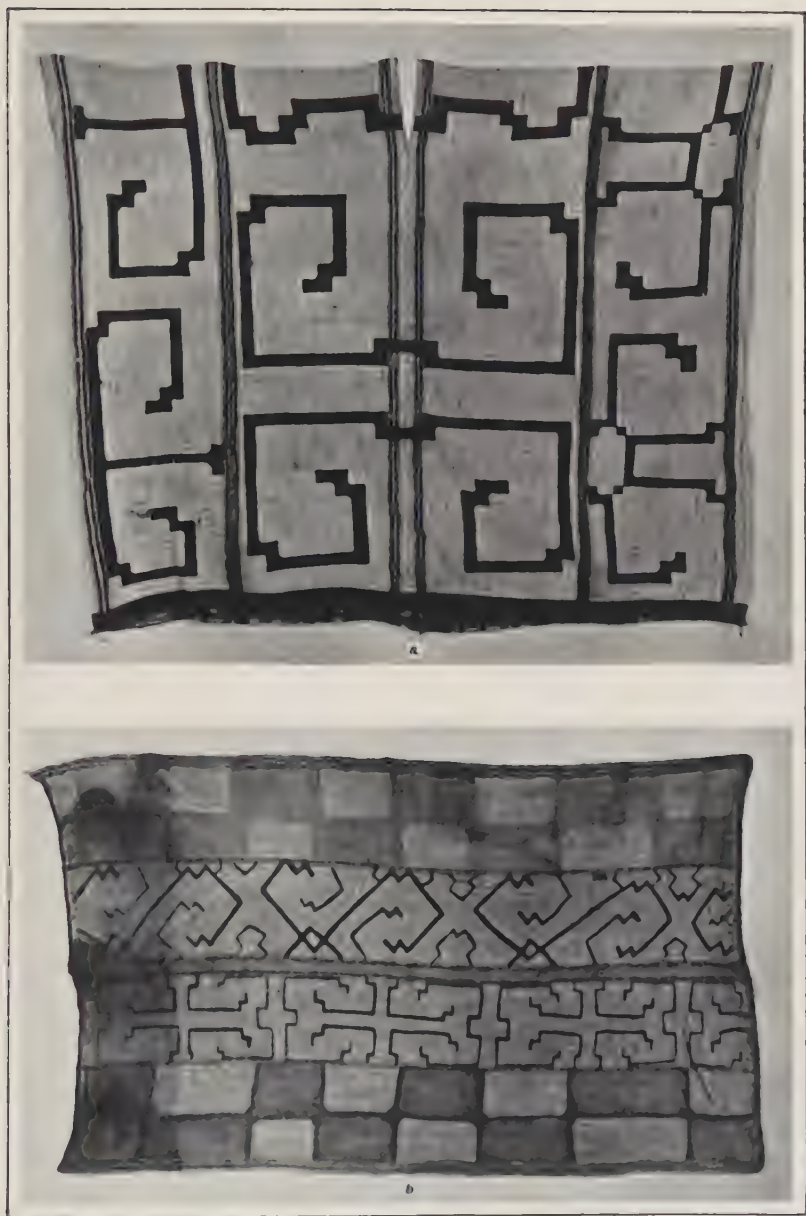
When there are two or more wives, each has her own sleeping mat, fireplace, and cooking utensils. Each wife gives the husband a part of the food, which he eats apart, and when he has finished, the wives eat what is left. Boys eat with their fathers, and girls with their mothers.

Before a girl reaches puberty, or in other words is eligible for marriage, her mother makes a very large earthenware jar, capable of holding twenty or more gallons. This is intended to hold the intoxicating drink for the daughter's defloration ceremony. The drink is made by girls who chew the root of sweet cassava (*Manihot aipi*) in order to mix the saliva with the juices of the plant and start fermentation. Pulverized corn is sometimes added to the masticated cassava, the whole mixed with water, and allowed to sit in the sun until sufficiently ripe to satisfy the taste, when it is strained through a long basket, and stored away in the large jar.

Personal Appearances. The Conebo admire a flat, broad head, and plump arms and legs. Soon after birth, the child's head is bound with a board on the forehead and a pad of cotton behind. This bandage is kept in place for five or six months, which insures the permanency of the deformation. This method is followed also by the Sipibo, and this accounts for the high cephalic index of these two tribes (plate 18 and figure 9). Men and women of all the Panoan tribes wear constrictions on the arms, wrists, and ankles. These are worn tightly enough to interfere slightly with the circulation, causing a deposition of fat in the tissues, and producing the desired plumpness of limbs.

Pottery. The Conebo women are the best potters in the whole Amazon Valley (plate 10), but they are followed very closely by their Sipibo neighbors. The pottery made by these two tribes is supplied by exchange to many other tribes throughout the Ucayali River and its tributaries. The Conebo make more pottery, and hence their name is attached to all the pottery of the two tribes. The materials and decorations used by the two tribes are practically identical, and the processes are the same, but the Conebo are better mechanics and the more skilful artists. While it is impossible to determine which tribe made a piece of common pottery, one may be quite certain that the finer examples were manufactured by the Conebo.

The materials are all obtained locally. The white clay is col-



Panoan garments: a, Sipibo man's cushma; b, Conebo woman's shoulder blanket. (1/15.)

lected from the river banks at low water, and the pottery, on this account, is made during the dry season. The ash or bark of the ohe tree (*Licania utilis*), or of some other tree giving a very fine white ash, is mixed with clay in an old pot where it can be kept clean. When the clay, mixed with water, has reached the desired consistency, a small lump is rolled, between the hands or on a board, into a long fillet, the size depending upon the thickness of the pot. This is then placed around the edge of the pot under construction, squeezed into place by the fingers, and smoothed by holding a stone on the inside, and rubbing with a shell on the outside. Thus the worker goes around and around the pot, until it is completed. No wheel is known; the pot sits in the sand or on a board. The necks of the smaller pots are made separately, and luted on.

The small drinking bowls are made exceedingly thin, and in perfect form. The rim is trimmed with the teeth, moistened with the tongue, and finished with the thumb nail. When the pot is finished, it is allowed to stand in the shade until it has hardened, then it is smoothed and polished. If it is a cooking pot, it is fired at once; if it is to be painted, a thin slip of very fine white clay is first applied, and when dry the decoration is laid on with a strip of bamboo. Yellow clay is used for yellow slip, and red stone for red slip. The large rough pots are placed in a slow open fire, and thoroughly burned. The large puberty pots are burned by placing them upside down on a tripod of three smaller pots, and covering them with a great heap of dry thorny bamboo, then a fire is built underneath, and fed with the same material. By this method very little smoke is produced, and the intensity of the heat can be controlled. The fine drinking bowls are treated very differently: a large pot with a hole in the bottom is placed on three stones, or more often three piles of inverted pots and the bowls to be fired are inverted inside the large pot. The first one is placed over the hole and ashes poured around and over it, and others are inverted over this, until the pot is full, or all are used. A slow fire is kept burning under the large pot until all are well baked, then they are taken out one at a time, and while hot, melted copal is poured over them. This accounts for the glazed appearance characteristic of this pottery.

The various designs used in the decoration of the pottery must have had some symbolic significance in the beginning, but at

present no one seems to know the symbolism. They say they have always used these forms. Similar designs are used in making their bead necklaces, in painting their cushmas, and in decorating their paddles, tobacco pipes, etc.

The rough pottery is used for ordinary cooking purposes; the small bowls, for dipping food and drink from the larger pots; the larger bowls, for passing drink to guests; the larger jars with short necks, for carrying and storing water; and the largest of all are made primarily to hold the intoxicating drink used at the puberty ceremony for girls, and later used for storage purposes. The largest of these chicha jars so far reported is one in the University Museum, Philadelphia, collected by the author in 1914, which is four feet two inches across, and three feet high.

Grammar. The plural is formed by adding 'bu' to the singular: dog, oteiti; dogs, oteitibu; parrot, wawa; parrots, wawabu. The masculine adds 'embu' to the singular or plural, and the feminine adds 'aibu'; dog, oteiti; dog, *m.*, oteitembu; dog, *f.*, oteitaibu.

The conjugation of four verbs, be, speak, live, and bring, follows:

TO BE, UNANKU

| PRESENT | | IMPERFECT | |
|-----------------|----------------------|-----------------|----------------------|
| <i>Singular</i> | <i>Plural</i> | <i>Singular</i> | <i>Plural</i> |
| 1 iadiki | nowariki | 1 buenduraku | kaurakatiriki |
| 2 suaikimi'iki | matoi'iki | 2 miaraibirei | matokimimoabukanai'i |
| 3 hariki | haboriki | 3 haraki | rambakandosiwa |
| PAST | | | |
| <i>Singular</i> | <i>Plural</i> | | |
| 1 katanki | nuarakatinki | | |
| 2 minkikatana | matokibotakatankenda | | |
| 3 karaka | burakanki | | |

TO SPEAK, YOYOIKE

| PRESENT | | CONDITIONAL | |
|-------------------|--------------------|-----------------------|------------------------|
| <i>Singular</i> | <i>Plural</i> | <i>Singular</i> | <i>Plural</i> |
| 1 uriyoyoikai | nowarayoyoiku | 1 yoyoitiraibire | norawutsatiayoyoitiki |
| 2 miasayoyoie | malokeyoyoikai | 2 yoyoitibiraiki | haskatarayoyoiberikati |
| 3 owariyoyoikai | owabobiyoikai | 3 haberayoyoitibiriki | haskalarayoyoitiki |
| IMPERFECT | | PRESENT PERFECT | |
| 1 warayoyoikatiai | noaborayoyoikatiai | 1 uramananku | nowararanku |
| 2 warayoyoikatiai | moarayoyoikatiai | 2 mironkininanku | haskalaronkianku |
| 3 warayoyoikatiai | moarayoyoikatiai | 3 haskalaronkinanku | haskaronkiyoyoikanku |

| PAST | | PAST PERFECT | |
|--------------------|---------------------|--------------------|---------------------|
| 1 liyarayoyoikai | miyakemiyoyoika | 1 haskatarauyoyoi- | haskatankemiyoyoiku |
| 2 miyakiyoyoka | miyarayoyoikēnki | antanku | |
| 3 miyarikiyoyoka | miyarayoyoikēnki | 2 haskatarakeman- | haskatankemiyoyoiku |
| | | anki | |
| FUTURE | | 3 eroyoyoikambaiki | wabarahaskalanyoyo- |
| 1 yērēyoyoiki | nowarayoyoitiiki | | ikai |
| 2 yoyoiwui | haborayoyoitibiriki | | |
| 3 yoyoirabiratiiki | haborayoyoitibiriki | IMPERFECT | PRESENT PARTICIPLE |
| | | yoyoiwu | harayoyoikai |
| PAST PARTICIPLE | | PRESENT PERFECT | |
| haroyoyoiku | | IMPERATIVE | |
| | | haberayoyoiviraku | |

TO LIVE, HARAKA

| PRESENT | | FUTURE | |
|--------------------|----------------------|---------------------|----------------|
| <i>Singular</i> | <i>Plural</i> | <i>Singular</i> | <i>Plural</i> |
| 1 urahaku | noahano | 1 urihabirati'iki | ninononhanonku |
| 2 miakihariva | matokihariva | 2 harivandosiwu | handosiwu |
| 3 haiirahaku | harakanku | 3 haraviraku | haraverakanku |
| IMPERFECT | | CONDITIONAL | |
| 1 haiirahakatitai | haiiranoahakati | 1 harakianku | norahativiriki |
| 2 haiirahakatiē | miakihaii'ikatia | 2 haravimirahakanku | mirahati'iki |
| 3 harakati | haiirahakatikanu | 3 haravirakanku | harakanti'iki |
| PAST | | PRESENT PARTICIPLE | |
| 1 urahakatiē | noarahaku | haraka | |
| 2 miakihaiikatiē | noararamahaiipowniku | PAST PARTICIPLE | |
| 3 habutaraipownika | haiirahapownikanku | haiirahakatitai | |
| | | IMPERATIVE | |
| | | nendurahaku | |

TO BRING, URAVIKAI

| PRESENT | | FUTURE | |
|--------------------|----------------|---------------------|--------------------|
| <i>Singular</i> | <i>Plural</i> | <i>Singular</i> | <i>Plural</i> |
| 1 rabuiteiki | nora'abuti'iki | 1 erabuti'iki | norabuti'iki |
| 2 abuikima | nundosiwu | 2 nunkibuti'iki | bundosiwa |
| 3 haraibuti'iki | wabungbuti'iki | 3 bukinka | haborabuti'iki |
| PAST | | CONDITIONAL | |
| 1 urabuku | norabuku | 1 burati'iki | noraburbuirati'iki |
| 2 menkibua | minkibua | 2 bucongdoconk | bendosimi |
| 3 burkima | marabukanki | 3 haraburburati'iki | harabuti'iki |
| PRESENT PARTICIPLE | | PAST PARTICIPLE | |
| burconghaienawa | | marabwaku | |
| | | IMPERATIVE | |
| | | iraki | |

ADJECTIVE PRONOUNS

| | | | |
|------------------|---------------|----------------|--------------------|
| Anything | hawidi'ibidai | All, <i>f.</i> | aiinvobitcoditi |
| Some | yamerdiki | All, <i>m.</i> | itceritsanaii |
| A few | tsowarihovida | Same | harliki |
| Nobody | howana | Sufficient | yamatanerake |
| Nothing | maraiyamasai | Both | drabui |
| Much | itcaliti | Each one | habitcorilai'i |
| Few, <i>m.</i> | yamataniraker | Other | oitsa |
| Every, <i>m.</i> | havitci | Such a | ha'adi |
| Every, <i>f.</i> | hatioavia | Something | hardiki |
| | Either | | owitsaraskaravitci |

PERSONAL PRONOUNS

| | | | |
|------|-----------------|------|--------------------|
| I | iya, ilya | We | witsanawa, noabu |
| Thou | yebitco, mia | You | natoti, matobu |
| He | drabui, eanato | They | yawitsarasibanawa, |
| She | hatinētoti, owa | | owabu |

POSSESSIVE ADJECTIVES

| | | | |
|-------|--------|--------|--------|
| Mine | nokona | Ours | habati |
| Thine | hawina | Yours | hawina |
| His | seitsa | Theirs | kokui |

DEMONSTRATIVE ADJECTIVES

| | | | |
|-----------------|-----------------|--------------------------|--------------|
| This, <i>m.</i> | näto | That, distant, <i>m.</i> | hadfki |
| This, <i>f.</i> | nokonarikinekto | That, distant, <i>f.</i> | h'cimëyäkata |
| That, <i>m.</i> | howiräto | These | oyakaka |
| That, <i>f.</i> | owadi | | |

COMPARISON

| | | | |
|----------|--------------------|---------|-------------|
| Good | hai'inkinokawe | Sour | pagi |
| Better | hakontiki | Sourer | makac |
| Best | hakontiki | Sourest | makac |
| Bad | hakomolikisinai | Much | itcariki |
| Worse | vinokai'idake | More | itcebideska |
| Worst | haskirasabutsanake | Most | itcemiliki |
| Sweet | wata | Little | kimca |
| Sweeter | watacema | Less | itcamecigo |
| Sweetest | watacema | Least | itcamecigo |

Vocabulary.

THE FAMILY

| | | | |
|-------------|--------------------|------------------|-----------------|
| Family | itcarikanonkai'ibo | Brother | honiboci |
| Man | werbo | Sister | sévi |
| Woman | ai'ibo | Son | yosi |
| Husband | mia | Daughter | yosa |
| Wife | nokoëni | Child, <i>m.</i> | otco'atonk |
| Grandfather | otcipapa | Child, <i>f.</i> | mici |
| Grandmother | tetäcko | Boy | waka |
| Father | papa | Girl | yosa |
| Mother | tëta | Infant | tcäkitcora |
| Uncle | tcipapa | Grandson | kai'ibo |
| Aunt | natei | Granddaughter | tsano, tëtaciko |

PARTS OF THE BODY

| | | | |
|-------------|--------------|--------------|--------------|
| Body | yamarakanami | Stomach | poko |
| Flesh | nami | Belly | poro |
| Skin | bici | Arm | hatioya |
| Bone | säotc | Forearm | poya |
| Skull | manapu | Upper arm | kici |
| Head | mapo | Lower arm | vitais |
| Hair | woa | Elbow | poenki |
| Hair, white | wos | Wrist | muituki |
| Face | vimano | Joint | pontonko |
| Beard | koimi | Hand | maka |
| Eye | vero | Palm | mikenopas |
| Eyebrow | verokosini | Thumb | mikana |
| Ear | pavëki | Nail | mansis |
| Nose | dretci | Finger | miatoti |
| Mouth | kusa | Index finger | icama'oha |
| Tooth | sëta | Patella | drabosa |
| Tongue | hana | Foot | tai'ipoga |
| Neck | tëton | Sole of foot | tai'inopas |
| Shoulder | vaska | Toes | tai'imontis |
| Back | karso | Heel | tai'itciponk |
| Side | ëspi | Ankle | tai'itongo |
| Breast | sïrotci | | |

CARDINAL POINTS

| | | | |
|-----------|---------------------|------------|--------------|
| North | paro | Southwest | natokayavi |
| South | tcipunki | Southeast | natotcipunki |
| East | varipikoti | Zenith | nato'abutcki |
| West | varihikita | Nadir | maiwitcitco |
| Northwest | nendoriki | Up river | parorebuki |
| Northeast | nendoriparatcipunki | Down river | toipunki |

UNIVERSAL SYSTEM

The Conebo have words for one and two only; four is sometimes two and two, while all the other words are taken from the Quichua instead of the old Panoan. The Quichua is like the northeastern Peruvian dialect.

I do not now attempt to account for this borrowing.

| | |
|-------------------|---------------------------|
| 1 havitco | 14 tcunka tcusku |
| 2 rabui | 15 tcunka pitcika |
| 3 kwimica | 16 tcunka sokota |
| 4 tcusku | 17 tcunka kanteis |
| 5 pitcika | 18 tcunka pusak |
| 6 sokota | 19 tcunka iskun |
| 7 kanteis | 20 rabui tcunka |
| 8 pusak | 21 rabui tcunka havitco |
| 9 iskun | 22 rabui tcunka rabui |
| 10 tcunka | 30 kwimica tcunka |
| 11 tcunka havitco | 31 kwimica tcunka havitco |
| 12 tcunka rabui | 40 tcusku tcunka |
| 13 tcunka kwimica | 50 pitcika tcunka |

VERBS

| | | | |
|--------|------------|----------|--------------|
| be | oinke | move | lámárákáká |
| buy | howákope | paddle | hēwenake |
| call | kěrnáke | paint | másá |
| carry | seyáke | painted | másáawá |
| chop | pusake | pass | venokáene |
| come | nětahooá | pay | sheroe |
| cook | yoáke | pick | senáráki |
| cry | sīyeke | return | kákáse |
| cut | nákákí | roast | yonánke |
| die | mawatá | run | hávákěěntáká |
| dig | tceneke | sell | mánege |
| divide | pákěrske | send | kátáwá |
| drink | seyake | sew | kursegkě |
| eat | pete | shoot | towáte |
| enter | heke | sing | aburwa |
| fall | rákáte | sit down | yákáte |
| fly | noya | sleep | osáe |
| give | měneke | smell | kenánke |
| go | nena | sting | naturáká |
| grow | yose | stir | coveánke |
| have | yětánke | sweep | másote |
| hear | nínkīyemě | swim | nonoe |
| hide | pebídaka | think | cenáne |
| hunt | havěrnáke | vomit | kenane |
| know | megonīyemá | wash | teokapárebá |

ADDITIONAL WORDS

| | | | |
|---------------------|-------------------|--------------------|-------------------------|
| above | wokŭticideke | canoe | monte |
| absent | mimpápiyoetá | cat | meceato |
| after | nokooronámpotaame | chair | yácáte |
| afterwards | drámŭdeáki | cloak | kolŭtce |
| all | havŭtce | close | kěneyá |
| all | hativavia | cloud | nietc, nŭtakoě |
| all, <i>m., pl.</i> | echěreetsauie | coca | háwaro |
| all, <i>f., pl.</i> | ienvobetcodete | copper | páñse |
| alone | habetco | corn | šěrke |
| also | hábeseeke | cotton | wasmie |
| always | něnowŭdeetá | cow | vaca |
| anger | měrákákě | crazy | tcopotáwáke |
| ankle | tictongi | dance | wěwěuáhoa |
| arm | hálebyá | dangerous | hakomilekekatema |
| arrow | peyá | dark | tcáráŭke |
| as if | nádávenakáutěkáuá | day | etesáwáte |
| at night | yámeámerie | day after tomorrow | aetsábákes |
| axe | yáme | deaf | nŭnkiyamědě, nŭnkiyamáh |
| back | cároso | deep | koceo |
| ball | váráwalo | difficult | anantesnareke |
| balsa | tápá | deer | tcáso |
| basket | sintá | dinner | yántámparábáno |
| beard | koerne | direct | anátcireke |
| beautiful | akolekhehooá | distance | otcolike |
| bed | watce | dog | otcetc |
| before | mooá | double | tsámárákě |
| belly | poso | dozen | tákeválákeola |
| below | yákátce | drum | tambora |
| between | hike | duck | nono |
| bird | esá | each one | hábetcorělie |
| black | woa | ear | pávake |
| blind | yaměrdŭke | early | nětáwe |
| body | yamarakaname | easy | onántemáleká |
| bone | sšotc | earth | mie |
| both | drábue | elbow | poěnke, pontonko |
| bow | kánote | enough | yámátáueračkě |
| bracelet | esorsta | eye | věro |
| breast | srotce | eyebrow | věrokosene |
| branch | hewepayčk | face | vemáno |
| brave | buabo | far | otcosereke |
| breakfast | ŭmpebano | fear | nětēpautceá |
| bridge | káwáte | finger | meátote |
| brilliant | kencollčkě | fire | cáro, tce |
| cacas | torámpe | first | hábetco |
| cane | sawŭ | fish | woá |

| | | | |
|---------------------|------------------------|--------------------|---------------------|
| flesh | name | lower leg | velass |
| floor | hāmátá | machete | matceto |
| flowers | huá | massasamba (fruit) | sámameáte |
| fog | mátse | massamba (fruit) | nesáurimeäre |
| following | hábwetáóki | mend | koshítłkě |
| forearm | poya | midday | guádeápũ |
| fork, wooden | sasá | milk | torámpe |
| fork, silver | sasica | monkey | esokoro |
| foot | tiepoga | moon | osě |
| four times | etcěrekátábátě | mouth | kusa |
| fruit | sená | mouth | sěrke |
| gold | cole | much | etcálete |
| hammock | ámaká | nail | náuses |
| hand | máká | name | háni |
| handsome, <i>m.</i> | hákonteke | neck | taton |
| handsome, <i>f.</i> | rakěrnaenów | never | kěrnami |
| happy | hoyámaká | new | hekerákũ |
| hat | yonárake | night | ocenäre |
| head | mápó | nobody | howaná |
| headache | esendíca | noise | tětirámetě |
| health | memínenołmpádě | nose | drětce |
| heel | tietceponk | nose-ornament | kěrníte |
| hill | máuesne | not any | yámerská |
| horse | cabie | nothing | máriyámari |
| house | srobo | not yet | olmpádeo |
| how | hówide | now | olmpadeoe |
| hunger | těrápecásěperándásuaso | ocelot | enowáká |
| hunt | guánoráke | old | pápácgó |
| index finger | eshania obá | old man | otcspápá |
| injustice | erácekamák | old woman | tetácgó |
| jaguar | eno | old tree | hevetano |
| just | habetceráłnkě | one or the other | owetsáráskárávetce |
| lack | mánorákě | once | yábetcorátátáuga |
| lake | eyáh | one-fourth | drábuekaskěsabue |
| large | áne | one-half | káskeběno |
| last | pówěsteá | one-third | neáwě |
| late | márákibádě | orange | naransa |
| lazy man | yomůtsũ | other | oetsá |
| leaf | nepuě | paddle | veente |
| left, to the | měrmeo | pair | kesydrábue |
| lemon | lemoh | palm | mekěnopás, tienopás |
| lie, <i>n.</i> | hānsuetáetĩ | Pan's pipes | pákānowekáo |
| life | dromivě | pantaloons | tcěrástě |
| little | yámátāneráker | papaya | potca |
| light | howĩ | parrot | wáwá |
| load | kárká | part | sātu |
| long | měnkěrdenǎukě | past | ewídeke |

| | | | |
|-----------------|-------------------|-----------------|-----------------------------|
| patelle | drābosā | then | oīmpadeo |
| peccary | hondo | third | keniećā |
| pipe | cenetāpoo | thing | hārdeke |
| plantain | parāntā | thirst | tīreseātćāsēātsemotsoson |
| play | mānorākē | three-fourths | hāhetćekāškēr |
| pole | heve | thrice | kemesherābotaevā |
| potato | paā | through | hōwewoomanketćetcowemaukeva |
| pure | hesveyāma | thumb | mekānā |
| quickly | ēstonāwe | tired | lerēosemārezē |
| quiet | copīsege | tired, very | ēreokoćeāme |
| rain | oe | tobacco | drombā |
| reason | oīmpārdāāhevinō | today | necānengāta |
| rest | wērekoseāme | toes | tiemontes |
| rifle | wārātāwāte | tomorrow | wākes |
| right, to the | mekayow | tongue | hānā |
| river | huoīyā | too bad | menōkīenākā |
| roof | peshe | tooth | sata |
| sad | hoyeniē | trail | vīe |
| sad | hoyeniē, peāmerāē | tree | hewē |
| salt | tāce | tribe | sowotsa |
| same | hārleke | trunk | hewevedā |
| sea | piroāne | turkey | coso |
| second | nāpong | turn, <i>n.</i> | wīetetso |
| secure | hīnpedēke | twice | habetērekātāngā |
| shawl | dākote | two-thirds | drābasāboa |
| shirt | kotong | ugly | hākemoleke |
| shirt | ćetondē | until | ēroki |
| shot-gun | towāte | upper leg | kece |
| shoulder | vāska | useful | hiyonoteāmā |
| side | aspe | various | etćhāreke |
| silver | coleke | verba, fruit | nerswā |
| sing | micināhoā | village | pěškāuko |
| single | yākāpālebāno | voyage | drāmāunkākī |
| skin | bece | waist | kotōnk |
| supper | pepālebāno | war | senāte |
| skull | mānāpoo | warm | tsānāseke |
| sky | nie | water | umpās |
| sleep | osākās | way | vīe |
| small | māćkotćenow | where | hōwīde |
| snow | neāwī | white hair | wos |
| some, <i>m.</i> | yāmērdeke | wind | newā |
| some, <i>f.</i> | tsowārehovidā | word | hāunhiū |
| something | hawedeēbedāe | work | nokorā |
| soul | māwāte | wrist | muetuke |
| spoon | ćetćkā | year | tsosenemārike |
| spoon, wooden | nokesta | yesterday | yantā |
| tapir | āwa | yucca | atsā |

SIPIBO

Distribution and General Culture. The Sipibo properly belong to the region of the Ucayali River near the mouth of the Tambo, but today they are found scattered among rubber workers all along the Ucayali, Urubamba, and Madre de Dios Rivers. Their traditional home was a place called Roboya on the lower Ucayali. The group whose physical measurements are recorded here was found in the possession of Sr. Maximo Rodriguez, a rubber gatherer on the Madre de Dios, near the mouth of the Piedras River. We are indebted to Sr. Rodriguez for much of our information, for the privilege of working with the Indians, and for his own splendid hospitality.

The Sipibo speak a dialect of the Panoan language very similar to that of the Conebo. Their whole culture, material and social, is practically the same as that of the Conebo. They have the same loose political organization, with a head-man who exercises little authority except in warfare, and occasionally in family quarrels. They successfully repelled invasions attempted by the Inca in ancient times, but they were greatly impressed by their civilization and warfare. They think that the Inca will yet return to power in the Andes. Anything they see that is new, strange, or beyond understanding, they believe belongs to the Inca.

Home Life. The Sipibo build the same type of house as that described for the Conebo (plate 12, a). They sleep on mats made of reeds, or the soft parts of palm fronds. For their food supply, they depend less upon fish and more upon agriculture, than do the Conebo. They grow large fields of yucca or sweet cassava, and make it into flour as needed. When the plant is about ten months old, they pull the tubers, peel, and soak them in an old canoe for several days, then shred them and roast in large pans, thus reducing the mass to a very coarse flour. This flour may be stored for several months, and used as needed. It is eaten in soup or with water only, and is very nourishing. The plant grows from a cutting, and requires very little cultivation.

The cooking utensils consist of the usual pots, bowls, wooden spoons, and ladles with handles on either the right or left side (plate 15).



Sipibo house and group



Sipibo Indians

Dress and Ornamentation. The men dress in a cotton cushma (figure 10), which reaches to the knees, and sometimes they add to this a pair of embroidered trousers. The women wear short cotton skirts, teitonti, and cloaks, rakota, over one or both shoulders (plate 13). Men and women go bareheaded except at night, or in the sun, when they throw a loose cloth over the head. The women gather the wild cotton, seed, clean, and store it away in large leaf pockets which have a hole in the side for the hand. These receptacles are suspended from the roof, and look like hornet



FIGURE 8
Sipibo potter

ests. The spinning is done with a spindle of chonta palm, ten inches long, having a whorl of pottery, one and a half inches in diameter, and three-quarters of an inch thick, similar to those of neighboring tribes. The lower end of the spindle rests in a gourd cup, while the other is twirled between the thumb and forefinger. In order to prevent perspiration and the clinging of the thread, the fingers are frequently dipped into a bowl of ashes.

The cushmas, skirts, and cloaks are woven on a large horizontal loom (plate 14, b). The necklaces, and arm and leg bands are woven on a small heart-shaped loom made of a bent liana (plate 16).

The cushma may be dyed dark red, and have heavy lines of black painted over it, or it may be white with either red or black lines in paint (plate 11, a). The native-made skirts and cloaks are usually dyed black.

Cords are made of bast, and used for nets, bags, carrying-baskets, harpoon and bow cords, and drum strings. The men wear strings of feathers hanging down their backs, and long strings of beads and seeds over the left shoulder and under the right arm



FIGURE 9

Sipibo mother and children. The head of the infant is undergoing artificial deformation

(plate 17). The knife, *utcate*, is attached to a long finely woven band, and hung around the neck (plate 17).

Both sexes wear half-inch bands on ankles, wrists, and above the elbows, also necklaces of monkey teeth, and various kinds of beads. Those of monkey teeth fit close to the neck, arms, legs, or wherever worn (plate 18). The longer strings of beads are worn over the shoulder. Beads are made of seeds and nuts of different kinds, bird bones, and teeth of various animals, such as pig, jaguar, tapir, and monkey. Many glass beads are used on bands, an inch



Sipibo Indians: *a*, Dugout canoe, 46 feet long and 5 feet broad, made from a single log;
b, Woman weaving; *c*, Head-man and family



Sipibo household utensils, fire fans, and knife. (About 1/7.)

wide, worn about the neck and wrists; these are of different colors, and woven into beautiful geometrical designs (plate 19). Both men and women wear nose and lip ornaments. The septum is pierced, and a small disc of shell or silver, the size of a dime, is suspended on a thread or tied up close to the septum. The lower

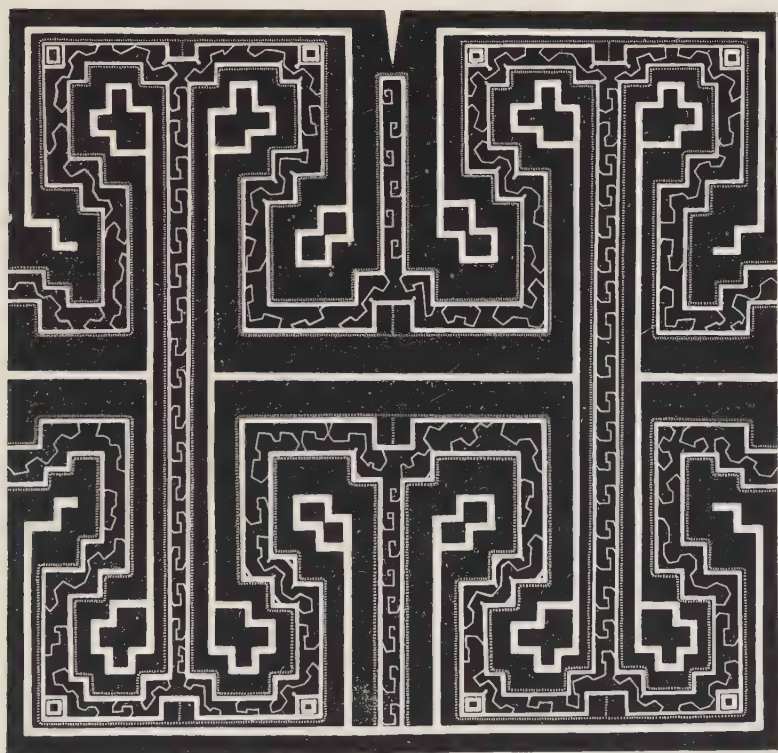


FIGURE 10
Decorative design from a Sipibo man's cushma

lip is pierced in the middle at the level of the gums, and a flat piece of silver or wood, kodi, inserted. This ornament is two to four inches long, tapering from one-fourth inch at the lip, to one-half inch at the lower end (figure 12, a, b). They paint their faces, hands, and feet in elaborate geometrical designs as shown in figure 13. These lines are laid on with strips of bamboo. A strip, of the

desired width, is drawn over the surface of the paint, then laid on the skin, and drawn from left to right. The work is free hand, and done very rapidly. Certain persons become more expert than others, and may be called upon to paint a number of friends. Anyone may wear the paint, which seems to have no significance, other than that of satisfying their ideas of beauty.

Tobacco. The men grow tobacco, and smoke it in large wooden pipes, six inches long, one and a half inches across at the bowl, and tapering to one-half inch at the bottom. The short stem is

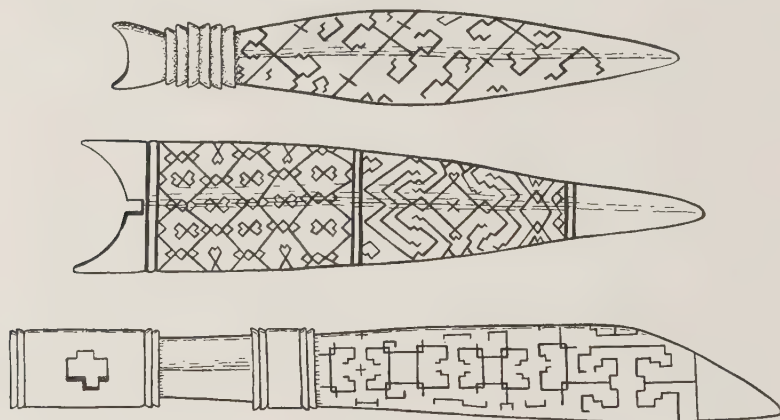
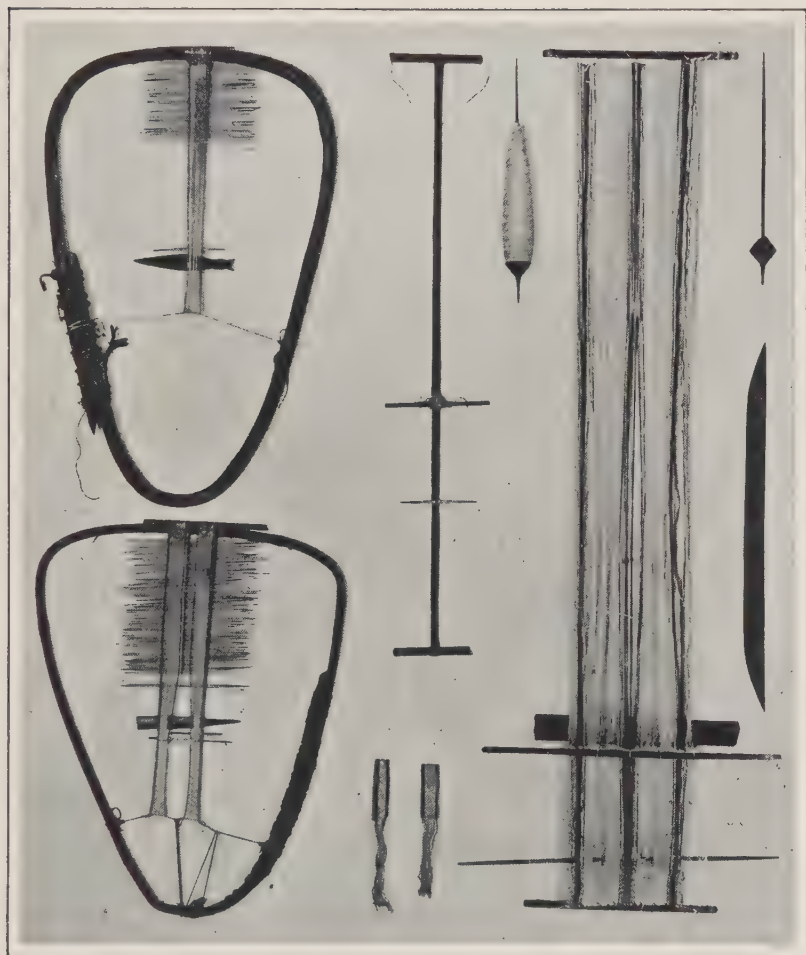


FIGURE 11

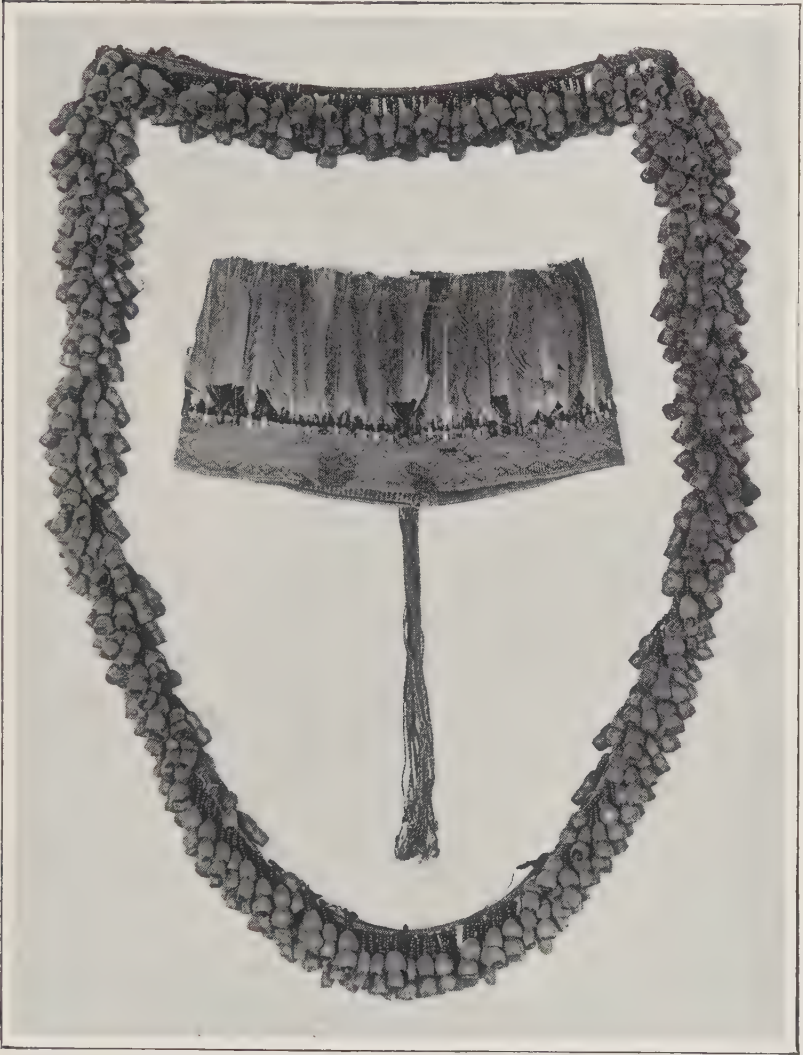
Decorated battens used with tape and belt looms, Sipibo Indians. (4/7.)

made of bird bone; these are like the pipes of the Conebo shown in figure 7. The women never smoke.

Artistic Designs. The Sipibo use the same general geometrical designs as the Conebo on their pottery, paddles, clubs, and parts of the body. They usually paint the legs, arms, forehead, and neck black, and then paint designs in red or black on the face, hands, and feet. The original designs, here reproduced (figure 13), were drawn by a woman with a strip of bamboo on the face, hands, and feet of her husband; then with a pencil she copied the designs on paper after a tracing of a hand, a foot, and a rough sketch of a face, had been made for her. The same designs are used by women and men without distinction. Whatever meaning these designs may have had originally has been lost, for they are used for purely



Sipibo arm bands, spindlewhorls, and looms for weaving narrow fabrics. (About 1/10.)



Sipibo necklace of woven cotton with nut-shell pendants, and a feathered head band. (1/4.)

decorative purposes now. It is interesting to note how completely blank spaces are filled with fragments of designs, and how variety is given by making some of the elements in wider lines. There is a general similarity of design running through all the productions, whether on implements, utensils, clothing, or the person, but no two are exactly alike. The angular forms may have been produced by basket-work. Very few curved lines, if any, are to be found, and no realistic drawings.

Marriage. A man may marry as many women as he can support, but all must belong to his own tribe. He may have concubines

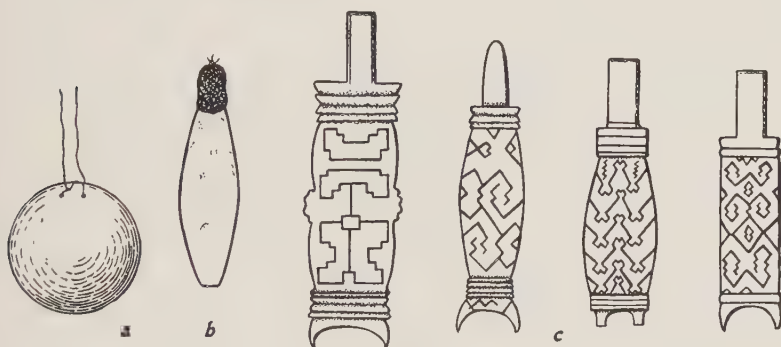


FIGURE 12

Sipibo Indians: *a*, Silver disc worn suspended from the septum of the nose (see plate 13, *a*); *b*, Silver labret worn through the lower lip; *c*, Wooden labrets. (1/1.)

from another tribe, and so raids are made among enemy tribes for the purpose of obtaining women. A man must marry all the sisters of the family as soon as they are old enough, but he may marry into other families also. The marriage ceremony with the operation of defloration, is the same as among the Conebo. Each wife has her own fire in the large common house, and she and her children eat and sleep alone. Houses are not in villages, but each house is separated by some distance of forest. A son may bring his wife into his father's house; or several brothers may build a large house together, and bring up their families under the same roof, having nothing else in common. Wives are always very kindly treated; even when unfaithful they are not punished or driven away. They are thus encouraged to confess, and give the name of the offender. The method of settling such a family affair

is, to say the least, unique. The offended husband gives no sign, but at the next fiesta when there is always drinking of chicha, and all are more or less intoxicated, he catches the guilty man by the hair of the head, and cuts a long deep gash in his scalp, with a small knife, called *utcate*, made and carried by every man for this purpose. They are now made of steel, but in the form of the ancient peccary tusk knife. Satisfaction is thus secured and the matter finally settled; there is no grudge remaining, and no retaliation. The offender cannot be attacked at any other time, cut in any other place, or punished in any other way. From the fact that each

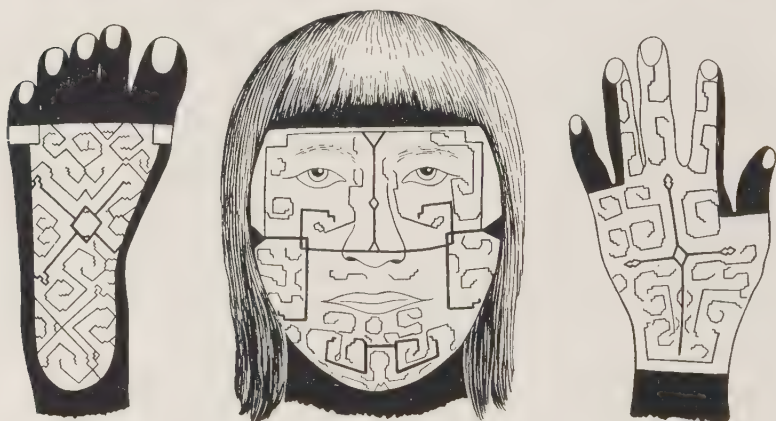
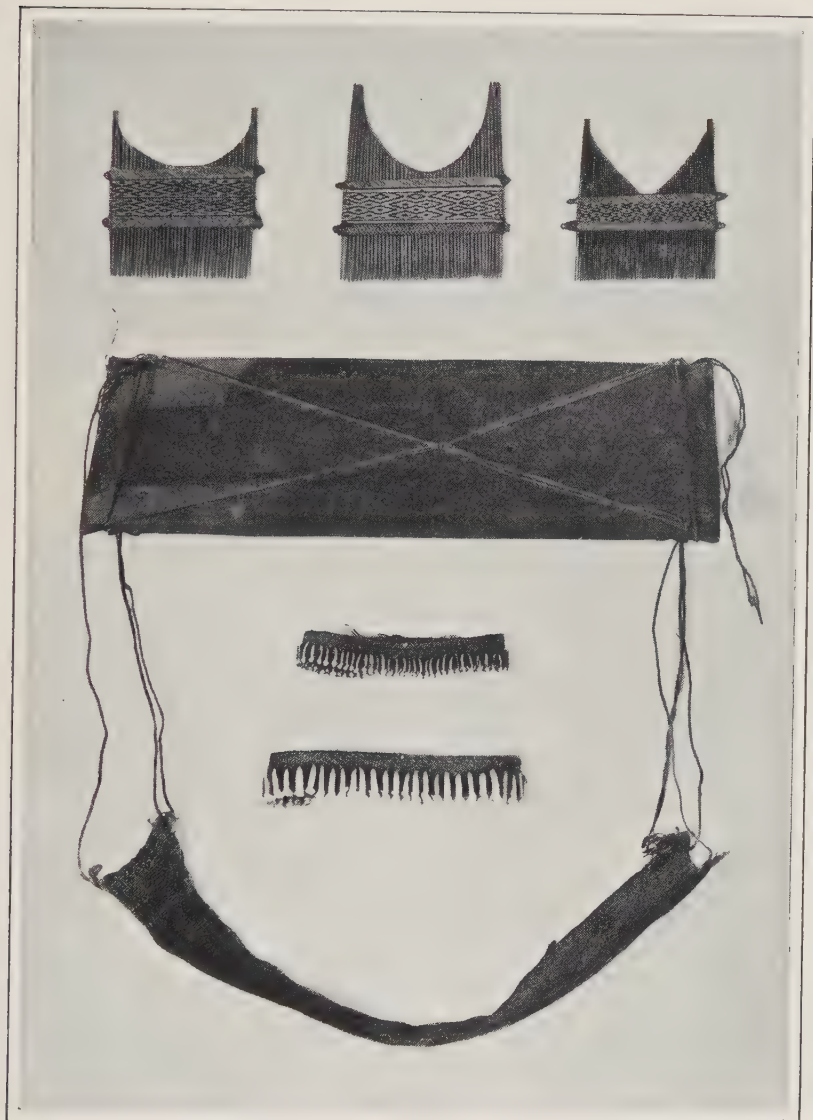


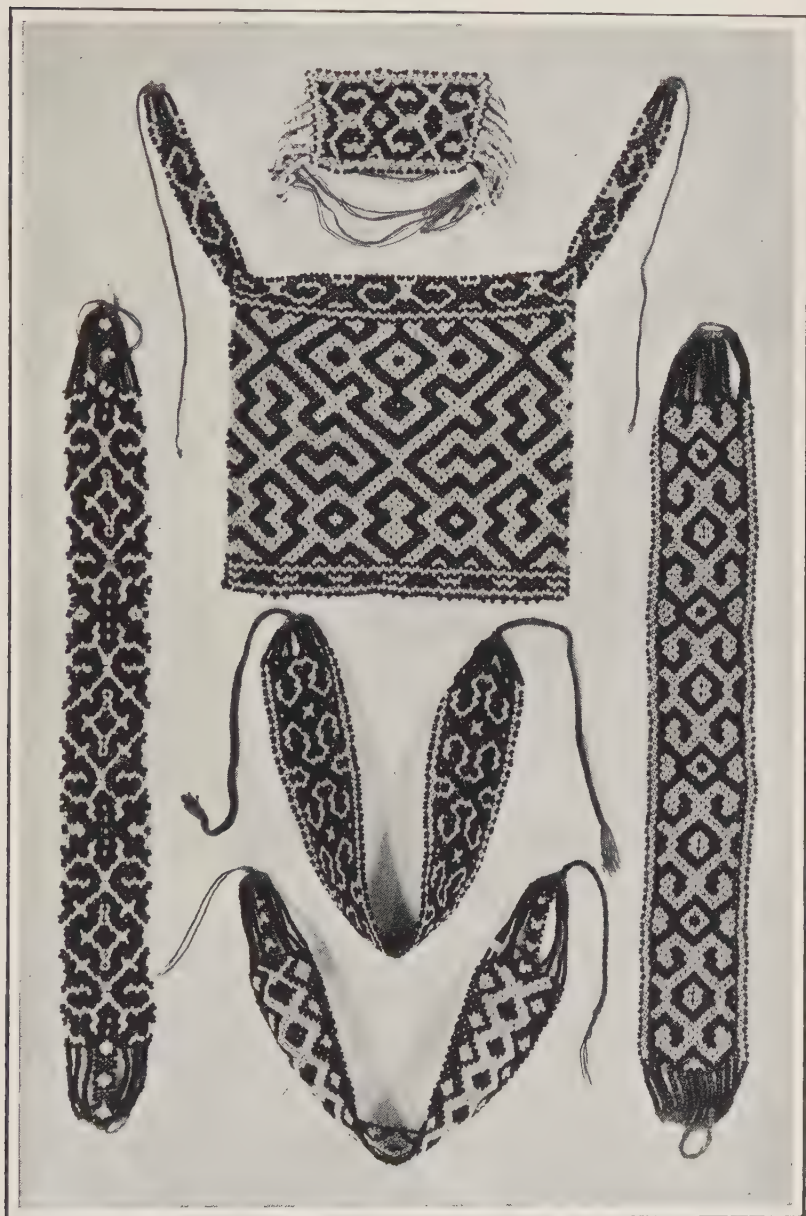
FIGURE 13

Sipibo Indians: Designs used in the decoration of the person by both sexes. The lines are in black or red paint. Usually the neck and forehead are painted black

man carries an *utcate*, it would seem that there must be constant use for them. We examined a number of heads, and found that about one in four had scars, and some fellows had three or four. Scars are no disgrace, yet those who had none took it as a good joke on the other fellows, and pointed out the guilty ones, who took it all good naturedly. Men treat women and children with great consideration. They trade their own things for necklaces, beads, etc., and give them to the women. Sometimes a woman would not trade her own things because her husband was away, but when he came he always allowed his wife to do as she wished. I never saw any evidence of anger or rude treatment between husband and wife.



Sipibo head-flattening board, hair combs, and woven arm bands ornamented with monkey teeth. (About 2/5.)



Sipibo beaded necklaces, and bracelet (upper figure). (About 1/3.)

The Dead. When a man dies a small canoe is made for a coffin, his body and all his belongings are placed in it, and buried in the earth floor of the house. All his neighbors attend the funeral, and while the men are placing the coffin in the grave, the women march around the outside of the house, holding hands and weeping. The wife or wives remain in the house near the grave.

The family cuts down the field, and moves away to prepare a new field and build a house. The old house is left standing over the grave. The widow at once goes into mourning; she cuts off her hair, paints her face black, and wears white clothing for a year. Every night for a month, and every full moon for a year, she returns to weep at her husband's grave. She throws away

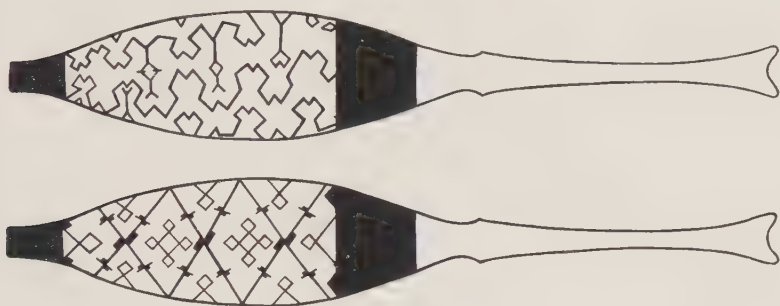


FIGURE 14

Sipibo paddle, showing decoration in black paint upon either side. Length, 68 inches

everything that her husband has given her or made for her. At Rodriguez's place there were two women in mourning; one for a relative, and the other for her husband. The one mourning her husband had her hair cut close to her head, was dressed in white, and remained under her mosquito net all the time, eating nothing for some days. The other woman, as I passed, was crying so as to be heard a long distance, but in a half hour when I passed again, she showed no signs of mourning or grief.

When a woman dies, she is buried under the floor of the house in the same way, without any ceremony, and the widower shows no sign of mourning. When a small child dies, the neighbors come in and sit around the room; the dead child is passed around and each woman in turn holds it for a time in her arms, and then it is buried under the floor of the house.

Religion. The Sipibo worship the moon as mother of all men. At each full moon there is a fiesta with songs and dancing. They have no worship of the sun. They do not account for the origin of man or of anything else. There are three heavens, all above, where the souls of the dead go. There were but two until white men came, when the lowest heaven was invented for them, the next higher for all the savages, and the highest for themselves, who are not savages but civilized men.

The good and bad all go to the same place at death. Heaven, or the place of the dead, is much like earth, except that there are no storms, and sunshine always. There are no enemies, or hardships, but plenty of game, fish, and women. All live above eternally, and there is no resurrection or return to earth. There is very little difference between the treatment of the good and bad, except that the bad may have more difficulty in getting food.

Medicine Men. The medicine man gathers herbs, makes medicine, yobusi, and attends the sick. He reduces dislocations, and sets broken bones with splints and bandages. He massages a great deal in his treatments, but practises sorcery also. He shoots small bones or wooden arrows into anyone at a distance, causing sickness and death. He can remove such arrows shot by other medicine men. To do this he has a smoking ceremony in which he uses tobacco. He sucks the arrow, removes the piece of bone or wood from the body of the sick man, takes it from his mouth, and exhibits it to the patient and to others present. In certain ailments he covers the seat of the pain with wet tobacco leaves, blows on them, and afterward sucks out the disease and swallows it. Such diseases do him no harm. If a man dies in spite of this treatment, it is because the other medicine man is more powerful than he, and he is not held responsible. The position of medicine man is inherited by his eldest son. The sick are well cared for, and the old people are respected and kindly treated.

AMAHUACA

Distribution and General Culture. I was unable to visit the home of the Amahuaca, but my information was obtained from two very reliable sources: Sr. Mathias Scharff, who had lived and worked among the Amahuaca for several years, using them in gathering and transporting rubber; and an Amahuaca girl, Kat-seime, about twelve years of age, belonging to a Peruvian woman who was on her way from the interior to Lima. The girl had been stolen from her own people a few years before by the Campa, and sold to a rubber gatherer. We spent six weeks at the same rubber station, and got a vocabulary and much information from her. She was afterward taken from the low hot interior country over the Andes mountains at an elevation of 16,600 feet. She was poorly clad, compelled to walk to keep up with her owner on horseback, and, in her exhausted condition in the cold high climate, she contracted pneumonia, and died before reaching the coast.

The home of the Amahuaca is the high country about the headwaters of the Sepauhua, Piedras, and Purus Rivers. The tribe is reported to be very large, possibly three or four thousand people. They live in families along the river in large communal houses. Their houses are built one hundred to two hundred feet long, and thirty to fifty feet wide, with very high ridge pole, and open gables. The framework of the house is made of rough poles, and the roof, which comes down to within three feet of the ground, is made of palm leaves. A wide hallway bordered with woven mats of palm leaves runs through the middle of the house. On each side there are a number of rooms ten or twelve feet square, separated from each other by woven mats. Fifty or more people live in each house.

The people sleep in large wide hammocks, capable of supporting two or three persons. When the evenings are cool a fire is built under the hammock to keep the occupants warm. Each family has its own fireplace, which is either in the central hallway or at one end of the house.

The Amahuaca have a very loose tribal organization. The chief inherits his position, but exercises very little authority except in times of warfare, when he has full control. They are an agricultural people, having large fields for growing corn, cassava, plantains, pumpkins, and peanuts. Their food supply is supplemented

by hunting and fishing. They build blinds of leaves near game trails, and shoot the animals with arrows as they pass. They also use blinds to call the curassows within shooting distance. They capture the tapir by digging a deep pit in his runway, and covering it with leaves. They carry the dirt a long distance away from the pit.

Fire is made by twirling one stick between their hands on a base which rests on raw cotton. They make chicha by the same method as the other Panoan tribes, and from the roots of some tree make a very intoxicating drink, which renders them delirious and causes them to fall into a deep sleep from which they awaken with pleasant memories. They are not as good pottery makers as the other related tribes, but manufacture sufficient for their own use. They make a rough carrying-basket of the ribs of palm leaves, which they carry with the aid of a tump-line of bark.

Signal Code. They make Pan's pipes of reeds which are used in making music for their moonlight dances. The drum is not used in their dances, but is kept for the special purpose of sending signals at a distance. The drum is made of a section of the trunk of a hollow tree, covered with the tanned skin of the howling monkey. Instead of the drum, they sometimes use a flat root of the alatea tree, from which they remove the bark, but leave the root in place. The signal is sent by pounding the root with a heavy maul, the sound of which may be heard a very long distance through the forest.

How complete the signal code is no one has been able to learn, but it seems to be sufficient for all their needs. It would appear that a drum keeper is always left at the village or at the landing place on the river to send warning signals in case of emergency. Once when Scharff went with his men to visit a village, he found an Indian at the river, who directed him to the chief's house. Soon after leaving the Indian, Scharff heard the sound of the signal drum, and when he reached the house, there was no one there except the chief to receive him. His interpreter told the chief that they came as friends to visit him. The chief replied, "If you are friends, you will leave your guns outside, and come into the house." When they went in, they were given chicha, and seated in hammocks. After another drum signal had been given, the people came from the forest into the house.

Dress and Ornamentation. The women wear a short skirt made of grass, bark, or woven cotton. The men go about naked with the exception of a cord about the waist under which is tucked the foreskin of the penis. This device is apparently designed to protect the organ from injury. Children go naked until the time of puberty.

The bodies are more or less covered with paint to protect the skin from the sun and bites of insects. Faces, hands, arms, and legs are painted either red or black. Both men and women pierce their ears, and insert small joints of bamboo as needle cases. The hard wood and bone needles are used primarily for removing thorns from their feet and exposed bodies. The septum of the nose is pierced, and a small stick of wood worn through it. The lower lip is also pierced, and a decorated piece of flat wood or silver is worn in the same manner as among the Conebo.

They artificially flatten the head of infants by tying a board on the forehead, and they also flatten the nose by tying a band across it. The front teeth are sometimes filed to a point in order to prevent the collection of particles when eating meat, and to be better able to tear the fibers apart. All wear long strings of beads made of red and white seeds, and bands of woven cotton around the arms, either plain, or with small monkey teeth attached.

Marriage. The Amahuaca marry within the tribe, but outside their own village. While they are allowed to marry more than one wife, monogamy is the general rule. To marry, it is necessary for a boy to hunt and work for the father of the girl he proposes to marry, until he has shown to the satisfaction of the father that he is able to support a family. When the father has given his consent, the young man must go into the forest some miles away, clear a field, plant it, and build a house. When his field is ready to use, at the end of about ten months, he returns, and takes his bride, without ceremony, to live with him in the new home. At the end of a year they return and make their home in the communal house of the wife's people. If a woman proves unfaithful, which seldom happens, she is driven away from the tribe.

When a man has more than one wife, each has her own hammock, and fireplace; each furnishes her share of food for the husband, who eats alone, or with the boys of the family. After he has concluded his meal, the women and girls eat what is left.

The Dead. When a man dies his immediate family leaves the house. The men of the household tie a rope around the neck of the naked corpse, and drag it into the forest, where it is buried in a sitting posture, and covered with leaves and earth. There is no other ceremony, and no evidence of mourning.

Warfare. The Amahuaca is one of the few tribes that makes a formal declaration of war, or notifies its enemies that it is preparing to fight. The common cause for warfare is the raids made for the purpose of kidnapping women. The chief has absolute authority, and makes preparations two or three months before setting out on a war campaign. They collect food, and make bows and arrows. When everything is ready, all the young women and children, carrying enough food to last two months, are sent away a long distance into the forest. It is the custom among all of these tribes for the conquerors to capture the women, and so this precaution is taken. The older women go with the men to carry food and ammunition. One tribe notifies another that it proposes to make an attack, by scattering loose corn along their trails. This seems to be a formal declaration of war. When a rubber gatherer wishes to be friendly, and to trade with the Indians, he hangs a gift in a tree near the Amahuaca's house. If the Indian wishes to accept the offer of friendship, he takes it, and leaves something in its place; if he does not wish to be friendly, he leaves it, and scatters corn about the place, as an evidence of hostility. When going into battle, this tribe makes the attack on the enemy very early in the morning, long before daylight. They keep their positions as they advance by imitating the call of some bird. When they have completely surrounded the house, the signal to attack is given by the chief. The chief remains behind at some distance, with a small bodyguard about him, receives messages, and sends orders directing the fighting.

They carry off the young women and children, but kill all the men and old women. They burn the buildings and destroy the fields, but never take possession of them. In warfare, they use bows and arrows, and clubs, but no spears, blowguns, or poisoned arrows.

The Amahuaca are noted warriors. They are said to be at enmity with all Whites, and to kill them upon sight. Upon inquiry, I learned that the first expedition that went up the Purus River into

the Amahuaca country was well received by the Indians, and furnished with all necessary provisions. After spending some time with the tribe in looking over the territory for rubber trees, the men, when they were ready to leave, captured an Indian girl, and carried her away before the Indians could make resistance. When they discovered what had happened, the Indians followed and attacked the canoes in their attempt to rescue the girl. None of the white men were badly hurt, but many of the Indians were slaughtered. They were finally beaten off, and the girl was carried away. Since then they have not admitted white men to their villages; and because of this they are reported to be savages.

Character. A very good insight into the character of the Amahuaca is given by the following occurrence: Sr. Scharff wished very much to have a large group of Amahuaca assist him in gathering and transporting rubber, and so taking with him as interpreter an Amahuaca who had been in his employ for several years, he made a visit to one of the chiefs in the interior. When they landed from their canoes at the Indian village, the interpreter went to the chief, leaving Scharff and his armed men behind. He told the chief what they had come for, also about the good character of Scharff, and the work he wanted the chief and his people to do. The chief replied that he wished the white men would leave him and his people alone in their own country, that they were not molesting the Whites, and they did not wish to be molested; but after due consideration the chief sent for Scharff and told him that he would make an investigation of his place for himself. He selected four of his own men, and went home with Scharff. They looked over the territory, made complete investigation of the whole situation, and returned to their people. They then held a meeting, and decided to accept Scharff's offer, and to move to his river. The chief told Scharff that they would remain where they were for the present and send men in advance who would make clearings, build houses for his people, and that in a year, when the fields were ready, the tribe as a whole would move to its new location. The plan was accepted and faithfully carried out by the chief.

The Indians were not always given such an opportunity to decide their own fate, as we learned from many occurrences and reports. We made a journey of several months to visit the brother of Sr. Scharff, who had a place and several hundred Indians on the upper

Piedras River, but before we could reach him, he was killed. He had been in the habit of sending a white man with some Indians to bring in men of another tribe. The methods were often barbarous; a few Indians would be captured, more killed, and the rest put to flight. Just before his death, Scharff (the brother) sent some of his Amahuaca Indians alone, armed with Winchester rifles, to capture a tribe a long distance away. It was the first opportunity these Indians ever had to retaliate, and they decided to make good use of it. Making preparations for a long absence, they soon returned, killed Scharff and his ten white employees, and burned the place. The report soon reached other rubber men, and Sr. Baldimero Rodriguez, with whom we had spent several weeks on one of our voyages, went over to learn what had become of all the rubber and other effects belonging to Scharff. The details will never be known, for he and all of his men were killed, and no white man has since risked a visit. The brother who was killed was the most notorious of all the rubber gatherers in the upper Amazon region.

Vocabulary.

THE FAMILY

| | | | |
|---------|-------------|-------------|------------|
| People | atiri | Sister | tcipi |
| Family | mikai, meke | Son | tcampi |
| Man | hunte | Daughter | tcipi |
| Woman | cõnto | Infant | bista |
| Father | upa | Grandfather | miyawaka |
| Mother | mipui | Grandmother | uga, mipui |
| Brother | tcampi | | |

PARTS OF THE BODY

| | | | |
|---------|---------|---------|--------|
| Body | nampi | Neck | tustcu |
| Bone | caute | Breast | tcuteu |
| Hair | bate | Stomach | poka |
| Face | eruke | Bowels | poko |
| Chin | huta | Bladder | isonti |
| Beard | kunte | Arm | boña |
| Eye | wero | Hand | maka |
| Eyebrow | werspi | Finger | muka |
| Eyelash | wersmi | Foot | taku |
| Ear | pavinki | Leg | gistci |
| Mouth | kuska | Heart | hointi |
| Lip | kutcka | Breath | wihe |
| Teeth | huta | | |

ANIMALS, BIRDS, AND PLANTS

| | | | |
|--------|---------|----------|----------|
| Monkey | tceñtuk | Mosquito | ciu |
| Jaguar | intok | Corn | huki |
| Dog | eintuk | Yucca | atsi |
| Pig | iya | Cane | tawata |
| Fish | iyepa | Banana | manintca |
| Bird | isa | Papaya | ni'ympe |
| Turkey | kotcutc | Camote | kadi |
| Poweel | asink | Tree | hi |
| Macaw | stcka | Bark | ckaka |
| Bee | micki | Wood | hie |
| Fly | necibi | Cotton | capu |

COLORS

| | | | |
|-------|-------|--------|---------|
| White | otco | Blue | tcao |
| Black | tcao | Yellow | mł'ytce |
| Green | tcote | Red | bietce |

VERBS

| | | | |
|--------|----------|--------|-----------|
| Answer | nesmai | Fall | pakui |
| Ask | ukaii | Fear | itakui |
| Bend | konti'y | Fight | mutcui |
| Bite | tutcai'y | Fill | wupatci |
| Bleed | ēmpi | Find | ēñki |
| Boil | hobatce | Float | wuatce |
| Break | urateki | Fly | pui |
| Bring | wuki | Follow | giwaii |
| Burn | kuatci | Forget | sinayampi |
| Bury | wake | Freeze | matsi |
| Call | kuntatci | Give | inanki |
| Catch | kusatei | Go | kai |
| Come | hoki | Grow | naba |
| Cook | hobake | Hear | bastcaki |
| Cry | adarki | Help | akinki |
| Cure | natcuke | Hit | magui |
| Cut | catuki | Hold | untak |
| Die | naki | Hunt | haintc |
| Dig | wucaki | Kiss | imbake |
| Dive | hēki | Know | einke |
| Divide | kakuki | Laugh | usaik |
| Do | aki | Lead | buki |
| Dream | uctcaiik | Leak | bupai |
| Drink | aiyaki | Learn | apai |
| Drop | mananke | Leave | niwaki |
| Eat | hiñi | Lend | inanki |
| Enter | ēki | Lie | utsai |

| | | | |
|----------|------------|---------|----------|
| Lift | iyarki | Shake | cake |
| Like | untak | Shoot | matarke |
| Listen | undestcai | Show | inke |
| Live | andowhai | Sing | cumbake |
| Look | eŋki | Sink | untuke |
| Lose | yokaki | Sit | sau |
| Make | aki | Sleep | ocai'i |
| Meet | iike | Smell | cuti |
| Miss | kantai'i | Smoke | koi |
| Murder | ŋtotaki | Steal | vianke |
| Overturn | mapokiwani | Strike | mauke |
| Paint | kuntari | Suck | uyuke |
| Pass | vŋdoke | Swallow | hidii |
| Pay | inanki | Swim | wugai |
| Present | inanke | Think | cinai |
| Roast | nantuki | Thunder | baicke |
| Rob | vŋanke | Tie | nocake |
| See | eŋke | Vomit | hanake |
| Seek | wandaki | Wash | tcokake |
| Sell | manke | Weave | kustcuke |
| Set | wake | Wound | buoi |
| Sew | kustcuke | | |

ADDITIONAL WORDS

| | | | |
|--------------------|------------|----------|----------|
| Around | watci | Fan | pici |
| Bad | iroma | Fishhook | mickiti |
| Basket | kaka | Fast | wuntah |
| Bead | moro | Fever | itsi |
| Bed | kaka | Fire | tci'ŋ |
| Belt | navi | Floor | tahuk |
| Bow | biya | Friend | ansabu |
| Bridge | hii | Fruit | biempe |
| Canoe | ckatcuk | Full | au |
| Cold | matse | Funeral | mai |
| Crooked | takorne | Grave | kinti |
| Cooking pot | kunte | Good | cada |
| Cushman | watci | Hammock | disi |
| Day | notoi | Hard | kuda |
| Dead | nai | High | mananke |
| Deep | bisma | Hill | mai |
| Diarrhea | tcihui | House | tapas |
| Dry | dando | Hot | itsi |
| Ear-rings | theusi | Hungry | kucmanai |
| Ear-rings of shell | paruntanti | I | iya |
| Egg | watce | Knife | iyampi |
| Empty | iyemba | Lake | wakoma |
| Enemy | ilakui | Leaf | montepwi |

| | | | |
|-----------|-------------|--------------|-------------|
| Lip plug | kirtcu | Sand | m̄sbo |
| Long | tcai | Seed | ustcuk |
| Loom | topiki, hii | Sharp | mocak |
| Many | naha | Shoe | tantc |
| Mat | bicii | Short | bista |
| Meal | h̄id̄ēē | Sick | widamba |
| Meat | nampi | Snake | trontuk |
| Medicine | micipa | Skirt | watci |
| Middle | kakuki | Skull | mapu |
| Midnight | natai | Sky | ocuk, nai |
| Milk | auntuk | Small | bista |
| Moon | ustcuk | Soft | wayo |
| Mountain | mismi, neĩ | Spirit, good | yocima |
| Mud | mai | Spoon | yambetsamba |
| Naked | watcemai | Spring | iña |
| Narrow | sambi | Star | bista |
| Near | oroma | Stone | mastca |
| Necklace | moro | Straight | tcai |
| Needle | hombo | String | nutci |
| Neighbor | wiputek | Supper | ĩēdi |
| Nest | kaka | Sun | wadik |
| Never | tsambe | Sweat | niskai |
| New | uinta | Sweet | wata |
| Night | yamp̄ei | Tattoo | apu |
| No | yampa | This | ĩtably |
| Noon | yambinatcki | Thread | nici |
| Nose-ring | edutche | Tobacco | ĩtompe |
| Nothing | yampa | Tomorrow | anuntai |
| Old | tcunti | Tongue | antak |
| One | naa | Tribe | wuitsa |
| Open | wicuatckui | Truth | konk |
| Pain | isi | Ugly | yēroma |
| Paint | kuntai | Urine | isawi |
| Palm | kaso | Unripe | kuda |
| Path | wai | Untrue | ontsahi |
| Pole | waketa | Vacant | yamba |
| Poor | watcimai'e | Vine | nēstci |
| Pot | kicpu | War | mauki |
| Rain | ui | Water | wakoma |
| Rich | cadak | Wet | mutca |
| Ring | matca | Wide | toah |
| Ripe | maniwa | Wind | matsi |
| River | huntuk | Wing | pai |
| Roof | mananki | Yesterday | ayante |
| Root | hi | You | miya |
| Rope | nice | Young | mascuk |
| Round | doro | Good man | tcadak |
| Salt | tastcik | Bad man | iromak |

PHRASES

| | | | |
|--------------|--------------|------------------------------|--------------------|
| My house | mitapas | I am tired | paki |
| Our house | untak | I am sleepy | kustcai |
| My foot | tahute | I am weak | wufkai |
| My feet | mitahute | Here it is | nahaki |
| Your foot | nitahute | There it is | oha |
| My hand | muimaka | I am in my canoe | mistcahu |
| My hands | itabuk | You are in my canoe | mindastcu |
| Your hand | mainta | We are in our canoe | mistcuha |
| My dog | untak | We are in our good canoe | caduk niknunhaunka |
| This woman | itably conto | He is in my canoe | ahaditu |
| This man | itably hunti | A man will come in a canoe | dahondihue |
| I am warm | mëska | A man will come with baggage | hayahue |
| I am cold | cukëi | I see two men in a canoe | itawihowi |
| I am hungry | kucmenahi | I saw two macaws | itawiinke |
| I am thirsty | wakoma | I have seen a dog | intoinke |

JIVARAN STOCK

Distribution of Tribes. This group of Indians, commonly known as the Jivaro, occupies a large territory on the eastern slope of the Andes Mountains in Ecuador between the Chinchipa, Altomaranan, and Pastaza Rivers. A small space between the Marona and the lower Pastaza is inhabited by the Murato. There are nine tribes speaking dialects of the Jivaran language, and having similar cultures: Huambesa, Tamora, Cuanduasi, Ashira, Andoa, Copotaza, Arapeca, Chargaime, and Upano. The first five of these tribes are friendly among themselves, and are enemies of the other four tribes. A line drawn west from Andoa would divide these two hostile factions. I was unable to visit the Jivaro in their own country to make personal observations, but was fortunate in finding at Iquitos, Peru, Sr. F. T. Muniz, who lived and traveled for some years among this people, and who gave me much information regarding them.

Early in the Seventeenth Century, the missionaries came into contact with some of the tribes, and established stations. The old Spanish town of Macas is reported to have had at one time several thousand Jivaro, but today the town has disappeared and the inhabitants are scattered among the Upano, who speak a dialect of the same language. The more remote tribes have had little contact with the Whites, and they continue to practise their old customs and to live their old tribal life. Their number has been reduced, until at the present time there are not more than eight or ten thousand remaining.

Home Life. There is no chief over the whole group, but each tribe has its own head-man. In time of war, a war-chief is selected who has absolute authority. They have no villages, but live in large oval-shaped communal houses, which may be seventy-five feet long and forty feet wide, containing several families. A family living in the large house may have a small house at a clearing some distance away, where they live while cultivating their fields. The houses are built of poles and have thatched roofs, the walls continuing to the ground, without windows or other openings except two

doors, one at either end of the house, one of which is for the use of women and the other for men. Each woman has her own little section of the women's end of the house, with her fireplace made of three short logs with ends together. At the other end of the house the men are grouped, each having his own stool and couch. The men in the house spend their time manufacturing blowguns, poisoned darts, quivers, lances, and round shields of wood or tapir skin. Here they make and keep the great signal drum. The men sit on stools, but the women must sit on the floor. They have no hammocks, but sleep on couches built on raised platforms around the walls. The women take care of the dogs, and keep them tied day and night to the foot of their couches. They make coarse pottery by the common coiling method, and also make baskets, nets, mats, and ropes as needed.

Food Supply. They are an agricultural people, depending less upon hunting and fishing than many of the neighboring tribes. They grow corn, cassava, sweet potatoes, and plantains. They depend to some extent upon hunting and fishing. They use no bows and arrows, but depend upon other devices. They are more expert at using the blowgun than any of the surrounding tribes.

The blowgun is made of two pieces of chonta palm, carved, polished, wrapped with strips of bark, and covered with pitch. The guns are about seven feet long, one and a half inches in diameter at the mouthpiece, and taper to three-quarters of an inch at the muzzle. The mouthpiece is made of bone which is inserted in the end of the gun. The Yagua blowgun mouthpiece is spool-shaped with a depression for the lips, while the Jivaro mouthpiece has a bone which is put into the mouth when blown.

The poisoned arrows are made of strips of chonta palm with a wisp of silk-cotton on one end to fill the bore and catch the breath. They are carried in a quiver which is fastened to a small joint of bamboo filled with curari poison, into which the points are dipped before being used. Blowguns are used here as bows and arrows are used among the other tribes, for killing birds and monkeys. The flight of the arrow is noiseless, and when it strikes the animal the shock is so slight that no attention is paid to it. The poison acts so quickly that the animal soon becomes dizzy and falls to the ground. The blowgun is the most effective weapon for all small game.

They use traps, snares, and pitfalls for catching the larger animals. For catching fish they use large nets with nut sinkers and balsa floats. They also poison the pools with the roots of babasco (*Jacquinia armillaris*). When the poison is used in large quantities the water is turned a whitish color, killing all the fish, which float on the surface where they are picked up from canoes.

Certain animals are taboo. The deer and sloth are supposed to be the dwelling places of the evil spirits, and are not eaten. The tapir is not considered good for women to eat. The men grow tobacco, and use it to smoke and drink.

Fire Making. They make fire by the common method of twirling a stick between the palms. They have an interesting tradition of how they first obtained fire. In the beginning they cooked their eggs in the sun, and warmed their food under their arms. A Jivaro man, Takia, first learned to make fire by rubbing two sticks together, but he kept the fire to himself, and would not allow his people to use it or to know how to make it, so they attempted to steal it from him. At that time the Jivaro resembled men but could fly like birds. Several of them went to Takia's house to try to get the fire, but Takia kept his door ajar, and when one put his head in, he closed the door, and killed him. The snake said that he would try another method, so he wet his wings, and went to the path where Takia's wife would find him in the early morning. She took pity on him, carried him into the house, and placed him near the fire. When he was warm and dry, he took a fire brand with his tail, and flew away to the top of a dead tree where he obtained some dry bark in which he wrapped the fire, and carried it to his own house. There he built a fire, and gave it to his people, so they were no longer compelled to ripen their food under their arms. Takia scolded his wife, but the Jivaro have had fire ever since, and know how to make it by rubbing together two pieces of silk-cotton wood.

Dress and Ornamentation. Men wear either a kilt-like cotton garment reaching the knees, or a loose sleeveless bark shirt. These garments are sometimes painted in geometric designs, or decorated by sewing on strings of monkey teeth, beads, or feathers. The leaders at the dance wear a beautiful ceremonial hat or crown made of feathers. The men also wear a back ornament made of bird bones, which is suspended from a band over the forehead. The

mummified head or war trophy is worn suspended over this ornament of bird bones. The women wear a skirt of cotton or bark which reaches a little below the knees, and a cotton cloak thrown over one shoulder and fastened under the arm. The children run about naked until the approach of puberty.

Both men and women wear necklaces of the teeth of various animals, and seeds of various kinds and colors. In their ears the men wear sticks of chonta palm about six inches long and one inch thick, from which are suspended feathers and wings of beetles. The nose and lips are not perforated. They paint their faces, hands, and feet black with "wito" (*Genipa Americana*), for protection against the flies and the sun. The hair is worn long behind, and cut square across in front. The men wear a loop of hair in front of their ears, wrapped and decorated with feathers.

Marriage. Polygamy is common among the Jivaro. A man has the first right to marry his cousin, and may also take her younger sister when she reaches the age of puberty. He is not compelled to marry his cousin, as he may prefer to steal a wife from an enemy tribe. The consent of the girl's father is necessary, before the marriage can take place, and if he is willing, he gives a great feast inviting all the members of the large household. The feast and marriage ceremony are in charge of the medicine man. When all are ready, the medicine man takes food and serves it to the bride, saying, "This is the way you must serve your husband." He offers her corn, cassava bread, sweet potatoes, and plantains, and each time repeats the same injunction. Then he brings a servant whom the bridegroom has secured, and says, "You must always be ready to serve your husband without his asking." This concludes the ceremony proper, and the rest of the night is spent in feasting and dancing.

The Jivaro often make raids upon their enemies for the purpose of carrying off young women for wives or servants. It has been reported that the Jivaro practise the *couvade*, but my informant was positive that they do not now, and probably never did.

When a man goes to visit a friend at his house, he steps inside the door, and stands at one side. A woman brings him a seat, and announces him. His host washes, combs his hair, paints his face, and dresses; when ready, he advances, greets the visitor, and sits down in front of him. The visitor talks in a high voice for fifteen

or twenty minutes without interruption, giving an account of what he has seen, and what he has done since their last meeting. The host occasionally gives assent by saying, "And this is the way you have done it." When the visitor has concluded, the host takes his turn for about the same period, then they stop and begin talking about other things in a quiet tone. When a woman enters a house she is taken at once to the women's apartment without any ceremony.

The Dead. When a man dies he is left in his bed, all of his possessions are placed about him, together with food and drink. The house and fields are deserted, and no one ever goes back to the house or takes anything from the fields.

Religion. The Jivaro do not have a well developed religious belief. Iguanchi, their chief spirit, takes account of all the important acts of life, but he is not worshipped in any sense, although he is considered a good and friendly spirit. It is unfortunate that the early missionaries applied the name of this good spirit to the Devil and manufactured a new name for God. The Jivaro have never willingly accepted religious teaching, and many times have driven the missionaries out of the country. They despise the Zaparo, because they have accepted Christian teaching, and are more under the influence of the Whites. The Zaparo, on the other hand, call the Jivaro "ancas," or savages, and are greatly afraid of them.

Medicine Men. No one dies a natural death. Disease and death are caused by the influence of an enemy medicine man, and hence the disease must be overcome by a friendly medicine man. The medicine man uses both herbs and magic combined. He selects his herbs, performs his incantations over them, moving his head from side to side, and then gives them to the patient. He then soaks tobacco in water, takes the fluid in the hollow of his hands, and sniffs it into his nostrils. He continues his incantations, and calls upon the evil spirit to come out of the man, saying "If you, the evil one, have caused this sickness, come and take it away." He asks the patient if he feels better; if he does not, then he calls upon the animals in the same language. If the patient is not better by this time he gathers other herbs and repeats the process, then he sucks from the seat of the pain and exhibits a piece of bone, chonta, or a small spider which he has sucked out. If the patient gets well, he makes lavish presents to the medicine

man, but if he dies, his friends may kill the medicine man or some member of his family, and a vendetta may be started in this way. When a medicine man is sent for, he first makes inquiry, and if he thinks a person may not recover he finds some excuse for not administering unto him.

Mummified Heads. The Jivaro are considered a war-like people, and as stated above, they are divided into two hostile groups, which have been traditional enemies for generations and live in a chronic state of warfare. There are continual raids made from one tribe to another, killing the men, and carrying off the women. They are sometimes called head hunters and cannibals, because they cut off the heads of the enemy, and carry them home to be preserved as trophies (plate 20). They are not cannibals, as they never eat any portion of the body.

The tsantsa, or mummified head, is their greatest trophy. When one makes a raid to secure a head the chances are even that he will lose his own, hence it is considered a great honor to take the head of one of the traditional enemy. If the head is that of a chief, some noted warrior, or other important individual, the honor is greater, and a great feast must be given to which all the friendly tribes are invited. To give such a feast it is necessary to clear a field and grow cassava, corn, and plantains, for food and drink for the great throng that will attend. This requires several months or possibly two or three years, hence it is necessary to preserve the head in order to have it present at the feast, as evidence of the hero's prowess.

The hero must plant his fields, but near the time of the feast his friends may assist him in hunting, fishing, and preserving meat, while the women of the house assist his wife in making great quantities of drink to be stored in large earthen jars.

The man must also undergo a fast, or rather submit to taboos. He paints his body with black lines, lives alone, and shows his bravery by going without weapons. He must not kill game with a spear, or eat the flesh of certain animals. He confines himself almost entirely to fruits, vegetables, and fish caught in the net. When the time for the feast arrives, the head-man takes charge. When the dance is ready to begin, the hero, carrying the tsantsa on the top of a staff, comes through the house, and presents it to the Master of Ceremonies, who dips the head first into a decoction of



Chanchas or shrunk human heads, prepared by the Jivaro Indians. (About 1/4.)

tobacco, then in chicha, and again in clear water. He afterwards pours a little of each of these beverages into the mouth of the hero, who is seated on a low stool. This ceremony ends the fast for the hero, and frees him from further obligations. The tobacco juice he has taken serves as a violent emetic, but he soon recovers, goes to the river for a bath, and returns to take part in the dance. The Master of Ceremonies carries the head towards the dancers, falls on his knees many times, and ends by making an address complimentary to the courage of the hero, in which he says, "Brave Jivaro, you have avenged an injury." He then sets up the staff, with the head on it, in the dance ground; and the men, with the hero's wife, clasp hands and dance around the head, hurling ridicule and derisive epithets at it, as they advance and retreat. At the same time the other women dance in a great circle on the outside of the men.

The dance at the feast of the head is the only opportunity that a woman ever has to dance with the men. It is her greatest honor. After this dance is over, the hero takes the head and hangs it on the principal pillar of the house, where it remains indefinitely. It may eventually be thrown into the river or disposed of at will. In some tribes it is kept and worn on anniversary occasions over the bird-bone back ornament. This ends the ceremonies connected with the head, but the dance continues day and night until the supplies are exhausted.

At midnight on the last day of the dance, a large number of young peccaries, which have been kept fat for the occasion, are brought out, killed by the Master of Ceremonies, and divided among the guests to furnish food for their journey home. This signifies the end of the dance, and is the farewell salutation. Preparations are now made for the departure, and then all join in a final dance which ends at daybreak. They have been eating, drinking, and dancing for days, and all are so tired that they soon camp and take a long sleep.

When the enemy is killed, his head is cut off with a bamboo knife, and carried home where it is hung up for three or four days until decomposition begins. An incision is made at the edge of the hair and carried over the top of the head to the back of the neck, and the skull is removed. The skin is cleaned of flesh, and boiled in an infusion of herbs containing astringents and preserva-

tives. The skin is then sewn up, and shrunk by putting hot sand and hot stones inside. As the skin shrinks it is manipulated to keep it in the desired form. Finally the head is greased and smoked for a long time over a fire made of roots of a certain palm tree. To keep the lips in position while the skin is drying, three small chonta palm sticks are thrust through them from below, and cotton strings woven in and out over the lips. These sticks are replaced with cotton cord when the head is completely cured; a transverse cord is attached to the three suspended cords, and hanging from it there are usually several single cords about fifteen inches long, decorated with feathers or beetle wings. These cords are not records, or quipus, but are used for ornamental purposes only. The ears are perforated, and have various decorations of feathers, beads, and beetle wings suspended.

When the skin is sewn up, a short stick is placed inside, attached to a string through a hole in the top of the head. This is used for suspension of the head over the ornament of bird bones, when it is worn. The head is reduced to about one-eighth its normal size as is shown in the photograph (plate 20), and is very dark brown in color on account of the smoke. It has been said that these heads resemble the originals to such an extent that they may be recognized. A woman is said to have recognized the head of her son, but in all such cases of recognition the fact is known that the head has been taken, and that it is kept in a certain house, so it would be very easy to identify it. There is so little resemblance to the original head that any one seeing a head for the first time is likely to doubt the story of its origin.

Some tribes preserve the heads of their friends as well as those of their enemies, but women's heads are never preserved.

Every boy is trained to be a warrior. He learns the manufacture and use of weapons, and the taking of the head. He kills a sloth, reduces and preserves its head in the same way that the warriors preserve the heads of their slain enemies.

For protection against the raids of their enemies they make sharp points of chonta palm and set them in the ground about the fields, so as to impale the enemy as he approaches. They also dig pitfalls in the trails, plant lances below, and cover the pit with leaves and bark. These pits are usually dug near the place where a log crosses the trail.

Dances. In ordinary dances, the men and women dance around a circle, not together but at the same time, all singing with a flute accompaniment. There is a special dance which the men dance in pairs. Each is armed with a lance, each in turn makes a short address in which he glorifies himself, then dances in front of the others with his lance ready to strike, and ends by making a feint at his opponent; the others then go through the same performance. In the love dance, a man dances in a circle, blowing a flute, while a woman follows him about.

The drum is never used to furnish music for the dance, but only for purposes of communication. It is made of a log, five feet long

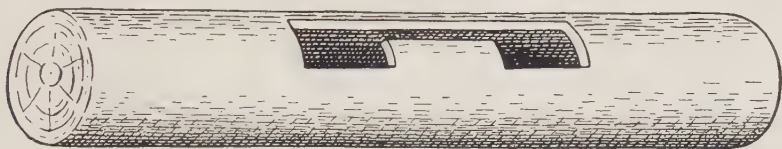


FIGURE 15

Jivaro Indian drum, five feet long and about one foot in diameter, made by burning out the interior of a log

and one foot in diameter, with a hole burned out in the middle, leaving a lip which gives only a single tone (figure 15).

Myths. *The Creation.* They have an interesting story of the creation of man. All animals originally had the understanding of men; animals, birds, and reptiles all used the same language, talked together, and understood each other. A great serpent lived in a lake, and killed many of the animals and birds when they came to the lake to drink or to bathe. So many of them were killed that they held a consultation to determine what might be done to dispose of the serpent. They captured the serpent by draining the lake, and killed him. Then they held a great feast at which they drank much, and men danced with the widows of those who had been killed in the conflict with the serpent. Until this time all the animals used one language, talked, and acted like men, but now each group of animals and birds went away from this feast speaking its own language. Some birds continued as men, and some of the monkeys as women; so today at their dances, the men sing, "histi, histi, histi," and the women sing, "oa, oa, oa," in imitation of the bird and the monkey.

The Flood. They have a myth accounting for the destruction of the world by water. A great feast was to be held, and two boys were sent away into the forest to get game. They made a camp under a tree, and went out to hunt. They secured much game, dressed it, and hung it up at the camp. The second day when they returned heavily laden with game, they were surprised to find that their first day's catch had been stolen. When they returned on the third day, they again found the meat had been stolen. On the next day, one remained in hiding to discover the thief. He found it was a great snake that lived in the hollow of the tree under which they had camped. To destroy the snake they built a fire in the tree, and the snake fell into the fire. The boys were hungry, and one of them ate some of the roasted flesh of the snake. He soon became thirsty, drank all of the water they had at the camp, then went to the spring, and from there to the lake. He was soon transformed into a frog, next into a lizard, and finally into a snake, which began to grow very rapidly. His brother was frightened, and tried to pull him out of the water, but the lake began to overflow. The snake then told his brother that the lake would continue to grow until the whole world would be covered, and that the people would perish unless he returned and told them to make their escape.

He told his brother to put a calabash in his pocket, to go on top of the highest mountain, and when the water came, to climb the highest palm tree. The brother returned, and told his people what had happened, but they refused to believe him, accusing him of destroying his brother; so he fled to the top of the mountain, and when the water came, climbed the palm tree. After many days the water began to subside, and he came down to the ground. From the top of the mountain he could see the vultures eating the dead people in the valley, so he went back to the lake where he found his brother, and carried him away in his calabash.

Origin of the Sun and Moon. The sun and the moon, in the beginning, were two Jivaro men living on the earth in the same house, with a woman called Ahora. They quarreled together about the woman, and the moon said he did not like her anyway, and in his anger started to climb up a vine to the sky. The sun obscured himself for a time, and the woman cried, "Why are you leaving me here alone, I am going to the sky also," and started to climb up

after the moon. She carried with her a basket of potter's clay. When she was near the sky, the moon saw her, and called, "Why do you follow me?" Before she could reply, he cut the vine and she, with her basket, fell to the earth. The clay grew, and the women today say that the clay from which they make their pots came from the soul of Ahora.

The sun went up to the sky, seeking the woman. The moon, fearing the sun, fled, running on the mountain tops so that the sun was unable to overtake him, and they have never been reconciled: thus the sun is always seen by day, and the moon by night. The sun and the moon were not able to live in harmony with one woman; they were always jealous of each other and quarreling about her, so today the Jivaro are jealous, and fight for their women. Ahora is now a bird and at every new moon she can be heard to cry, "My husband, my husband, why have you abandoned me?"

Origin of the Stars. A jaguar married a Jivaro woman, and asked her to pick the insects from his head. She did so, and ate the insects, as is their custom, but soon became nauseated. This made the jaguar angry, and he asked, "Why are you nauseated with your husband?" He at once ate her. As he was eating her, two eggs fell from his mouth; his mother, standing by, gathered up the eggs, and put them away in cotton in a small pot. They hatched finally, and were two Jivaro boys. They were afraid of jaguars, so they planned to kill them all, but one escaped, so the boys decided to go to the sky where they would be safe.

They made two bows, and many arrows. The small boy shot at the sky first, but his arrow did not reach the clouds. The first arrow the larger boy shot, pierced the sky, the second hit the end of the first, and the third the end of the second; and so the line of arrows finally reached down to the earth. The boys climbed up the line of arrows to the sky, and became the first bright stars. The line remained for a long time, and the people from the earth and the sky went up and down. It was in this way that the Jivaro learned how the stars originated. At last the moon cut down the arrow passage, and left the stars up in the sky. (The second part of this story seems to be borrowed.)

Vocabulary. While Sr. Muniz knew enough of the Jivaro language to get on with the people whom he had in his employ, his

knowledge was not sufficiently exact to be of much scientific value. He had, however, made a very good vocabulary which is here supplied for comparative study in the future.

THE FAMILY

| | | | |
|-------------|------------------|---------|--------------------|
| People | sagra | Father | aparu |
| Man | aicmango, kapito | Mother | nukuru |
| Woman | nua | Brother | yatsuru, yatsutci, |
| Wife | ëiohiri | | yetci |
| Grandfather | apatceru | Sister | umai, umaru |
| Grandmother | mukucuru | Servant | kunarun |

PARTS OF THE BODY

| | | | |
|----------------|--------------|------------|---------------|
| Body | ayeci | Shoulder | tankwero |
| Flesh | namanki | Back | yakai |
| Head | muka | Rib | pali |
| Head, shrunken | tsansa | Abdomen | huahi, ambug |
| Hair | indaci | Buttock | sumu |
| Face | yapi, yapiro | Arm | kunato, kundo |
| Chin | hankwi | Right hand | uniur'ra |
| Beard | hankwe, suso | Left hand | wina |
| Bearded man | susurintiño | Finger | wëhi |
| Eye | ha, hi | Stomach | ambubi |
| Eyes | ïmñi | Soul | ma'ambi, nusi |
| Mouth | kweno, weno | Joint | nantiyi |
| Tooth | nai | | |

ANIMALS

| | | | |
|------------------|----------------|---------------|----------------|
| Anaconda | yanunga | Fly, large | antci |
| Ant | whëta | Hawk | pintco |
| Armadillo | cucingi | Hen | ataci |
| Armadillo, large | sima | Heron | imia, kau |
| Bear | tcagua | Hog | kangai |
| Bee | tcini | Hornet | eti |
| Bee, honey | nukutce | Lizard | camba |
| Bee, yellow | micki | Louse | yarangwi |
| Bee, savage | sikati | Macaw | apatci |
| Bird | tcingue, picko | Macaw, yellow | yambono |
| Cat | mici, miciko | Monkey | yakuma |
| Cattle | hapa | Mosquito | ukumbë, ai'iti |
| Deer | wagra | Partridge | wangwica |
| Dog | yawaru | Parrot | tuici |
| Duck | undura | Parrot, green | kanwi |
| Fish | namaka, kanka | Pig | kuga |

| | | | |
|--------------|---------------|--------------|----------|
| Puma | hapa yahua | Tarantula | pandakwi |
| Rabbit | sauwa | Tortoise | tearapa |
| Rooster | ayumba | Trompetero | teiwa |
| Snake, black | napi makantci | Turkey | awatca |
| Snake, water | nikats | Turtledove | ciemba |
| Spider | kuntci | Wasp, yellow | hihuhu |
| Squirrel | kunamba | Wasp, black | angaini |
| Tapir | pana | Woodpecker | katacoma |

PLANTS

| | | | |
|---------------|---------|--------------|-----------------|
| Bean | mika | Pine | tcua |
| Camote | impi | Plantain | pandama |
| Caucho | pinta | Pumpkin | yuhui |
| Cane | wayi | Squash | unguepi |
| Cane, wild | zapapa | Star apple | yasu |
| Cedar | tcimbui | Sweet potato | impiyumitak |
| Corn | ca | Thorn | sapa |
| Flower | sis | Thicket | suata |
| Forest | ikiam | Tobacco | sango |
| Gourd | sapaya | Tree | kambua |
| Latex, rubber | turahi | Tree, copal | kunki teirikipo |
| Leaf | nuka | Tree, lanco | kakita, waruma |
| Onion | sipui | Woods | satca |
| Palm, chonta | piaio | Yucca | mama |
| Pepper | himia | | |

NUMERALS

| | | | |
|---|------------------|----|---------------------|
| 1 | cikitiki | 7 | himira'iwiki'iraku |
| 2 | himira | 8 | mññendu'iwiki'iraku |
| 3 | mññendu | 9 | ainduki'iwiki'iraku |
| 4 | ainduki | 10 | mai'iwiki'amuku |
| 5 | wina'amu | 20 | huihi iwiki amuku |
| 6 | wina'iwiki'iraku | | |

VERBS

| | | | |
|------------|--------------|-----------|--------------|
| Abandon | ahapatiño | Appetize | yayatisatiño |
| Able | nikupasitiño | Augment | pombartiño |
| Accelerate | huomakatiño | Arrive | hiatiño |
| Accompany | ayatiño | Ascertain | canuate |
| Ache | nahamatiño | Assist | awaratiño |
| Across | ikentakatiño | Awaken | nandaiktiño |
| Address | wahastiño | Bandage | hingwiata |
| Advance | imahata | Baptize | imitiratiño |
| Advise | atserkatiño | Bathe | maitiño |
| Afraid | icamatiño | Bar | ustukeratiño |

| | | | |
|--------------|-----------------------|------------------|--------------------------------|
| Bark | siimatiño, tapaikiño | Conquer | nauratiño |
| Be | awai, puhustiño | Constrain | imiteratiño |
| Beat | awatino | Construct | pi'ikmartiño |
| Beg | surucuo | Contain | pi'iktiño |
| Behead | supiktiño | Continue | aiyem satiño |
| Behold | istiño | Converse | ahusatiño |
| Believe | nikartiño | Cook | inyarkatiño |
| Bid | unsuktiño | Corrupt | kanatiño |
| Blister | nuwehe | Cover | maingatiño |
| Blow | iyutiño | Covet | wareruntiño |
| Blow, nose | cikimartiño | Create | nahantiño |
| Boil | kunktiño | Crop | yukiño |
| Bore | yuyuatiño | Crouch | akaiktiño |
| Bore, horn | ihirvitiño | Crowd | ninatiño |
| Bore, wood | inyuratiño | Cry | haitiño |
| Braid | isemata | Cure | sartiño |
| Brave | kaherkatiño | Cut | sispiktiño |
| Bring | itatiño | Cut down | awingatiño |
| Bring wood | hirituatiño | Cut hair | awartiño |
| Build | ukurtiño | Cut up | akartiño |
| Build, house | yëamtiño | Dance | hansihasinatiño |
| Burn | ikimaktiño | Deceive | anangatiño |
| Buy | sumaktiño | Desert | asatiño |
| Carry | ayatiño | Desist | aikantiasatiño |
| Cast | ahapatiño | Die | hakatiño |
| Catch | icikta | Dig | faustiño |
| Catch fish | kwinutino a'atiño | Dig out canoe | awatiño |
| Catch up | amayanta | Dine | itsiktiño |
| Change | yapahiatino | Discharge | ipiatino |
| Check | nimakatiño | Disembark | akakatiño |
| Choke | kahimaratiño | Divide | akangatiño |
| Chop | aentsuquatiño awatiño | Do | nahantiño |
| Circle | yetseratiño | Dog | yahu'aru |
| Clear | mastaë | Donate | suritiño |
| Climb | kakeratiño | Double | apihikutiño |
| Clothe | nambiktiño | Dress, an animal | akaratiño |
| Come | winitiño | Drink | wartiño, uwartiño, umartiño |
| Come here | winita | | |
| I come | winahe, wite | Drop | huhisikatiño |
| You come | winita, wita | Eat | yurumatiño |
| He comes | winima | Elevate | acatwa |
| He will come | winituia | Embark | hakiertiño |
| They come | wintiño | Encounter | inguktiño |
| Compress | citatiño | Entangle | hukamatiño |
| Conceal | inhuktiño | Examine | umbuartiño |
| Conclude | amatiño | Exceed | nangamastiño |
| Conduct | iakustiño | Execute | umiktiño |

| | | | |
|----------------|----------------|---------------|-------------------------|
| Extinguish | ikinatiño | Impede | nukurktiño |
| Fail | partiño | Intercept | utariatiño |
| Fan | awahingtiño | Instruct | nuimiteratiño |
| Fast | igeramaktiño | Intermeddle | pakikiño |
| Fear | icamamatiño | Invite | ipiatíño |
| Feast | iciektiño | Join | huktiño |
| Ferment | misatiño | Jump | sikingtiño |
| Feed | uhundatiño | Kill | matiño |
| Fell | atsongatiño | Kill, flies | mandurtatiño |
| Fight | maakatiño | Kiss | apoktiño, apatiño |
| Fill | piiktiño | Kneel | aiakicatiño |
| Finish | amuktiño | Knot | awhēmata |
| Fish | ahundakatiño | Know | wenikatiño, nikartiño |
| Fit | whaingtiño | Lead | ikiestiño |
| Follow | mayamagatiño | Leak | ukartiño |
| Forget | kahinamakatiño | Learn | nuimiteratiño |
| Fling | hapatiño | Leave | hukitiño |
| Fly | nanamatiño | Lessen | nakuiktiño |
| Freeze | mitoiptiño | Lie | wiitaratiño |
| Full | nayentumatiño | Light | ikiñuktiño |
| Gargle | kinktiño | Light, candle | yüikaimaktiño |
| Give | susatiño | Like | istiño |
| Give birth | enyeng ganusta | Load | aensuka |
| Go | witiño | Lodge | atuktiño |
| Go out | wiektiño | Look for | juktiño |
| I go | witi, wihe | Loose | hatiatíño |
| You go | wita | Love | aniata |
| We go | witi'imatin | Make camp | yapartiño |
| Grind | pa'atamastiño | Make candle | aka'atiño |
| Grow | sakartiño | Make canoe | pukmartiño |
| Grow plantains | sapastiño | Make drunk | maniktiño |
| Guard | inguekitiño | Make load | irumartiño |
| Hang | cukarustiño | Make rope | tcapiktiño |
| Harvest | iwitiño | Make time | uritiño |
| Have | amatiño | Make trail | hindamatiño |
| Hear | anduktiño | Marry | turutatiño, nuatakatiño |
| Heat, sun | itsiroderatiño | Measure | yagartiño |
| Help | yenguitiño | Melt | menartiño |
| Hide | ukmatiño | Mix | surimatiño |
| Hinder | kanningmaktiño | Mortify | tambiratmarta |
| Hit | atiño | Murder | naruma |
| Hope | wahastiño | Nourish | ayuratiño |
| House | yea | Observe | imastiño |
| Hunt | funakatiño | Obstruct | arangtiño |
| Hurry | meteke | Obtain | atciktiño |
| Hunt | misirtiño | Oppose | atuktiño |
| Injure | enuktiño | Overflow | wandakatiño |

| | | | |
|------------------|------------------------|-------------------|------------------------|
| Overtake | kenmaktiño | Sew | apaktiño |
| Owner | ataciertiño | Sharpen | aksakata |
| Paddle | wiandakatiño | Ship | ehëkeratiño |
| Pain | wakemeratiño | Shoot | trapitci |
| Pardoned | sakaiamatiño | Shorten | aksakatiño |
| Part | akangatiño | Shrink, head | teuiritiño |
| Pass | nangamastiño | Singe, scorch | mingartiño |
| Pay | akiktiño | Sit | puhustiño |
| Place | wasimayatiño | Sit, bird on tree | patamastiño, ikitatiño |
| Play | antengtiño | Sleep | kanartiño |
| Play, drum | tunduyatiño | Slip | inartiño |
| Poultice | kankartiño | Smoke | mukunatiño |
| Precipitate | mitsangatiño | Soften | minërtiño |
| Punish | asutiatiño | Sow | spikitcutiño |
| Put out | ikiepartiño | Speak | teitcastiño |
| Quench | kinuktiño | Spin, cotton | anungtiño |
| Question | inindarustiño | Spy | nakaktiño |
| Quiet | inesatiño | Stand | wahastiño |
| Quarrel | maakatiño | Stick | acingate |
| Rain | yutuktiño | Stir | anankirtiño |
| Reach | hiatiño | Stoop | itiyurcama |
| Recuperate | sa'aritiño | Strangle | kinktiño |
| Recover | tcimiartiño | Strike | awatiño |
| Reduce | pinuartiño | Suck | mukunatiño |
| Rest | yamaratiño | Subdue | nupuiktiño |
| Repay | awangatiño | Subside | wakinatiño |
| Full | ihemeratiño | Suspend | awaktanitiño |
| Return | wakitatiño | Swim | ukuaktiño |
| Restore | ayendatiño | Talk | teitcastiño |
| Rise, river | nupengaratiño | Teach | nikaperatiño |
| Roast | uwatiño | Thresh | akartiño |
| Roast, in leaves | yankunatiño | Throw | ahapatiño |
| Rob | kasamakatiño | Tie | etsemdata |
| Roil | yapimakatiño | Tighten | taingwegatiño |
| Roll up | napictiño | Toast | nuiktiño |
| Roost | aiyamatiño, awamsatiño | Track | yengatiño |
| Rub | yakartiño | Trade | takuktcamgatiño |
| Say | timatiño | Travel | wakastiño |
| Scatter | spikitcutiño | Trust | apuhukitiño |
| Scramble | wakatiño | Twine | huorta |
| Secure | aenderatiño | Unable | kuhendakatiño |
| See | istino, ista | Unchaste | takaptiño |
| Sell | suruktiño | Understand | ananktiño |
| Seek | wenekatiño | Unloosen | akupkatiño |
| Send, convey | aumatiño | Unload | takurtita |
| Serve | aismaktiño | Uproot | aentsuratiño |
| Settle | pakatiño | Untwist | kumgatiño |

| | | | |
|-------|--------------|-------|--------------|
| Untie | hētiatiño | Weed | takaitiño |
| Visit | īstiño | Wind | kendaīertiño |
| Wash | nihertiño | Wild | yupieratiño |
| Watch | itikimartiño | Wish | aniatiño |
| Want | tartiño | Work | takastiño |
| Weave | nihingate | Write | artiño |

ADDITIONAL WORDS

| | | | |
|---------------|-------------------------------|-----------------|------------------------|
| Above | arakani | Box | urukta |
| Account | cuaka | Breathe | acīngata |
| Achote, plant | ipiako | Brevity | huomuk |
| Acorn | atcuinama | Bridge | teaka |
| Active | asumbi | Brief | kuranta |
| Adam's apple | piuwa | Broad | whangarama |
| Afternoon | kiawi | Brood | utciri |
| Again | ataki | Brook | nananda |
| Aged | acanda | Broom | hapika |
| Air | nasi | Broth | kando |
| Alcohol | coaki, kaii | Bundle | hintcazon |
| Alone | ningue | Call, <i>n.</i> | kikame |
| Already | wingahi | Candle | koapartiño |
| All | tuki | Candle | yi |
| All right | maki, makati, paiayo, ya'atsu | Canoe | kanu |
| Ancient | tinwiki | Care | titu |
| Appetizing | yayatiño | Cataract | mutci |
| Aside | arandatci | Certain | turanwi, nikasi |
| Away | aranda | Chacara | aha |
| Axehead | yutca'ayineri | Chance | amakēi |
| Bad | kumaro | Charcoal | kayi, akata, kahimakai |
| Bag | cigra | Chicha | mihanantci, mahentci |
| Ball | mari, mara | Chip | nakacu |
| Balsa | papanga | Clever | yatciteranum |
| Basket | tcankina | Close | mai |
| Beautiful | penkera | Cloth | pučl |
| Because | uruka | Coal | kaigami, kaiki |
| Bed | pika, piaka | Cold | kutuki, sitsika |
| Bed, stream | kuyuama | Coffin | kanunma |
| Before | yaou | Complete | pēikama |
| Behind | atu | Contented | cire |
| Below | amara, nungatci | Copal light | kunkipuari |
| Bitter | yapa | Cornfield | naitcaca |
| Black | mukusa | Cornstalk | caski |
| Blue | lara | Cotton | anitci |
| Board | hapata | Cover for pot | amanekta |
| Boiled | knukama | Crude | inēa |
| Bow | kicimago | Cry | hax |

| | | | |
|----------------------|-----------------|--------------|------------------|
| Current | tciteiwi | Fine thread | sapsati |
| Custom | nuki | Fine | cerma |
| Dark | kerama | Fire | hi |
| Darkness | kaci'ikihi | Firewood | kacua |
| Dart | kandac | First month | huoteiti |
| Day | sawanda, sawe | Fishhook | sau |
| Day before yesterday | anuyaou | Flexible | kuciterama |
| Day after tomorrow | nukacini | Flour | nariña |
| Dead | hakame | Flute | pingue |
| Deaf | kuiciri | Food | yuruna |
| Deep | hiercta | Foolish | upa |
| Direct | tulupin | Form | kutanga |
| Dislike | netsa | For this | asa |
| Disregard | yahasama | Forward | wikehi |
| Distant | tihercatayerta | Fresh | mitci |
| Door | urēta | Fried | yuti, yurangue |
| Doubt | tumaci | Friend | amigro |
| Drop | rum | Friendly | nikasa |
| Dry | karma | From whom | yana |
| Dry meat | narnama, puka | Front | nihēyi |
| Dumb | iniirri | Full | nukupwi |
| Dung | suata | Full moon | nantuwata'apakwi |
| Dye | tciegarpi | Garment | awangwema |
| Eager | hitcitamai | Generous | isaramus |
| Early | taciki | Gold | kuri |
| Easy | ciri | Gone | wetci |
| Egg | nuhinda | Good | penkwera, ayo |
| Embrace | mineksate | Good day | ma'aki puhuma |
| Empty | muguida | Good time | isita, isata |
| Evening | cuara | Gratis | yanga, andera |
| Entire | aci | Grove | iklama |
| Evil | tuna, tawi | Growth | sakarta |
| Far | koro | Grave | matcitnusa |
| Fanner | awahuku | Gum | karia |
| Farmhouse | kundino, insawa | Gun | akaro |
| Farther | aranda | Handkerchief | papu |
| Fat | apo | Happening | whikahe |
| Fear | icamama | Happy | cira |
| Feast | manbun | Hard | kakarama |
| Feather | uri | He | ni |
| Feeble | watsarama | Here | yasa |
| Fermented | misawi | Head of palm | sambu, sambia |
| Few | icitiku | Heavy | kamburama |
| Fiber | tcambira | Here | pai, yasa |
| Fierce | yupairama | Hide | nuapi |
| Fierce, wild | kaheno | High | yuki |
| Fight | manama | Hill | nainda |

| | | | |
|----------------|-------------------|--------------|-----------------|
| Hillside | nainda | Money | tcankitu |
| His | amwi | Moon | nantu |
| Honey | micki | Moonlight | isetatatwi |
| Hot | suitsuit, swariti | Month | mantu |
| House | hēa, yēa | More | knatci |
| How much | uruntuna | Most | ahui |
| Hunger | irka, suka | Mould | umi |
| Hungry | sukumama | My | wiña |
| I | wi | Much | untsure |
| Idle | naki | Mud | sakusa |
| Idiotic | uguci | Machete | sa'api |
| Ill | hama, hawi | Many | irunume |
| Image | ēirie | Meal | ihanikinga |
| Impossible | itiurcatci | Mean | citama |
| Incision | miserma | Mercy | sakardi |
| Inside | inita | Naked | misu, tcanambi |
| Insufficient | nukuptcu | Name | nari |
| Insomnia | ahunerta | Narrow | pana |
| Invaluable | añuañuca | Narrows | serētcı |
| Jet | sasa | Near | arandatci, tipu |
| Jivaro | cuaru | Net | nika |
| Juice | yumiri | New | yamai |
| Lack | yayatsa | Night | kaci |
| Lance | nanki | Nightfall | kaiitci |
| Lard | kunduta | No | sa |
| Large | unda | None | atsuma |
| Late | uruma | Not | isa, atsuma |
| Lean | watsarama | Now | yamē |
| Lean to | hea'apakta | Oil | asuitē |
| Lemon | yumungo | Other | tcikitci |
| Lie | wi'ita | Outside | aranda |
| Light | hi | Over | yukinukinama |
| Light, to make | pandahi | Overhead | araka |
| Lighter | sata | Pain | nahamawa |
| Lightly | takapta | Pair | lhi |
| Little | utcitci | Past | kĩhini |
| Load, on back | aimakamatikwaskwa | Path | pisarta |
| Long | kuna | People | aentzu |
| Long ago | nitek | Pepper | anaibe |
| Long time | tconta | Pitch | sikata |
| Law | kuyuama | Pity | kuēmĩl |
| Lumber | numĩ | Plain | paka |
| Lunatic | tumbĩ | Playa | kanusa |
| Midday | itsatutapiri | Pocket | wambatci |
| Middle | akangata | Poison | siasa |
| Milk | muntzu | Poison, fish | timo |
| Mirror | espik | Pole | numi |

| | | | |
|--------------|---------------|--------------|-----------------------|
| Poor | misupahi | Side, other | amaini |
| Pot, chicha | muētsa | Side, this | huine |
| Pot, cooking | yertci | Silver | kwita |
| Pot, water | itcingana | Simple | kuntcikuno |
| Preparation | kokai | Simpleton | satca |
| Purse | pihantciri | Singular | iekitciki |
| Pshaw | ma'a | Slide | mitsangama |
| Quickly | kuranda | Slowly | yitamara |
| Quiet | titu | Smallpox | muro |
| Quiver | tcipēti | Smell | naherstiño |
| Rainbow | kundaiika | So | kēwi |
| Readily | acitcimbiahi | Soft | miña |
| Ready | urukana | Sold | wankani |
| Rear | insakahi | Solid | katsurama |
| Red | kapaka | Sorcerer | wicino |
| Reed | pa'ata | Soup | tumbi |
| Return | tatastahi | Source | pukumi |
| Remedy | sunka | Spear | ihiyuta |
| Returned | wakitakiapa | Spider web | ango angomari |
| Right | tutupine | Spirit, evil | sumai, cuentci pasuna |
| Ring | takasaipa | Spirit, good | uisa |
| Risen | mihungahi | Spirits | mahmtcicarēana |
| River | entsa | Star | yaya |
| Road | yinda | Steam | mayē |
| Robber | kasa | Sterile | ka'a |
| Robust | undaiyeci | Strange | ma |
| Roof | kombanaka | Storm | nasensayiyatawi |
| Room | piēkteuaci | Street | yinda |
| Round | kaner | Strong | kakarama |
| Rubber | farara | Sufficiently | nukupwi |
| Sad | mayahi | Sufficient | makiti |
| Salt | wi, katci | Sullen | panda |
| Same | tuki, au | Summit | nukurka |
| Sands | naikimi | Subdued | nupuitkam |
| Sap | yumiri | Sun | etsa |
| Sash | sa'aki | Sunset | etsanungahasēbi |
| Saw | murra | Sunset | itsa pukundahi |
| Scanty | sutaratci | Supply | ahui |
| Sea | nēri | Sweet | yumiña |
| Salt | yahu | Thankful | yumisatinu |
| Separate | miswa | Thanks | makiti |
| Shirt | puci | Thanksgiving | ikiauntumkataē |
| Short | tcuwatsiki | That | nu |
| Shortly | sutara | Then | nuyi, nu |
| Short time | nuiki | There | nuim, atu |
| Show | inyukturitiño | Thin | serritce |
| Sick | tumaro ha'ahi | Thirst | kita |

| | | | |
|-------------------|-----------------------------------|----------------|-------------------|
| Thirsty | titukapuhama | Water | yumē |
| This | asa, asau, hunuasa | Water, boiling | nuhukmakata |
| Thou | amwi | Water, in pot | uwaraē |
| Thus | nutcuaci | Warm | swera |
| Time | nuike | Wax | nugi, saka |
| Today | yamai | Weary | pīmbikma |
| Together | apalakama | Weigh | kīfiawi |
| Together, go | ihe, wiritē | Well | ya'atsi, ya'atsin |
| Together, two | apatikama | Wet | teupikama |
| Tomorrow | kacini | What | kurakangui |
| Twilight | sawarta | What | wari |
| Underneath | waptaka | What, animal | urukahi |
| Unknowable | nikateui | What, thing | warimba |
| Unknown | tca | When | urutai |
| Unmarried | natsa | Where | tui, tuin |
| Until then | weawikatahi | Wherefore | itiurkatiniki |
| Unwilling | nakimagē | Whirlpool | winki |
| Upon, hill | murra | Whither | tuimba |
| Vacant, house | sa'aki | White | puhu |
| Vanilla | sikuta | White, feather | sui |
| Very | ti | Who | ya, yuna |
| Very well | ayo | Whole | sinsēka |
| Vexed | kaherkama | Wings | nanēpwē |
| Village | hea aparama | With | yai |
| Vine | ka'api, naiku, teresa, harango | Wood | hi |
| Vine, fish poison | yokēi | Wornout | sambayaska |
| Vinegar | kaciki | Yes | hē, hētē |
| Walk | wikasta | Yesterday | anu, yau |
| Wall | kawito | You | atuma |
| Wasp | hihuhu | Your | amiño |

WITOTAN STOCK

Distribution. The largest and most important of the tribes of the Putumayo River region is the Witoto (Huitote, Ouitote, Uitote). It occupies the territory between the Putumayo and Caqueta or Yapura Rivers on the north, and the Napo River on the south. The population of the region is fifteen to twenty thousand, made up of the following sub-tribes:

| | | | |
|----------|----------|------------|----------|
| Emuirise | Kabduya | Monunisaya | Sigayo |
| Gella | Komeyone | Nongoni | Spuna |
| Haiyofo | Laboyano | Ouokaise | Uterua |
| Huraya | Maynane | Sebua | Yabuyano |

My authorities, from whom the following information was obtained, were Sr. Plinio Torres, who had used a band of Witoto for

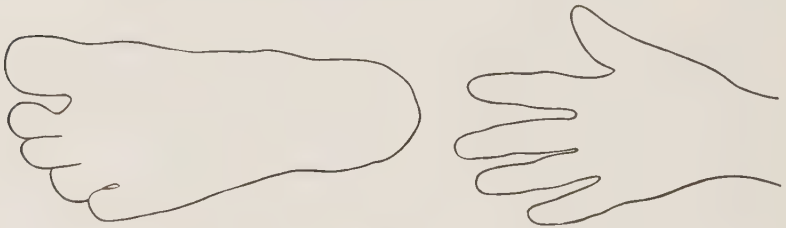


FIGURE 16
Outlines of hand and foot of Witoto Indian

a number of years in gathering rubber along the Putumayo and Madre de Dios Rivers; and the best possible authority, Jagi Huari, a Peruvian, who when six years of age had been left alone with the tribe for six years, in order that he might learn the language, and then serve as an interpreter when these Indians were taken over by Sr. Torres. He thus learned the language and customs of the Indians, and has continued to live with them for the past fourteen years.

On account of some disagreement with other rubber gatherers, Torres left the Putumayo region, with his Indians, and traveled

more than a thousand miles to the junction of the Amigo and Madre de Dios Rivers, where we found him clearing land and building a house. Several of his Indians died after reaching the Madre de Dios on account of fevers and dysentery contracted on the journey.

Organization. The Witoto Indians have a very close political organization for the sub-tribes, but there is no chief over all of the tribes. They live in enormous communal houses, grouped together about a great plaza. Each village has a chief, *ijama*, and two or more sub-chiefs, one for each of the large houses. The offices of chief and sub-chief are inherited by the eldest son. The duties of the sub-chiefs are to assist the chief, and to act in his stead when he is disabled or away from home. If the chief dies leaving a young son, his brother acts as chief until the son is about eighteen years of age. If a chief has no son, his brother becomes the chief.

The chief has absolute power over the lives and property of his people; however, if the chief is unjust or exercises his authority too freely his people may move away, and leave him behind. The chief has full power in time of war, but for ordinary occasions he calls for volunteers. The chiefs may have more than one wife. When one chief visits another he takes tobacco and coca along with him, as a gift, while his wives take choice fruits and meats for the host's wives. His host invites him into his house, and offers him tobacco and coca, and when he departs the chief presents him with tobacco and coca, or a tiger tooth necklace.

Houses. The large communal houses may have as many as a hundred apartments, and are capable of accommodating as many families. The center of the house is used for a meeting place and for dances. The houses are kept dark on account of flies. The roof, made of the leaves of vegetable ivory palm (*Phytelephas macrocarpa*), reaches to the ground. There is no smoke-hole or windows, and only one folding door made of leaves, which is kept closed. Each family has a very small hanging door of leaves. The large apartment opposite the entrance door is assigned to the chief. The house, plate 21, was being constructed for the accommodation of Torres' group, so that it was not as large as the ordinary Witoto house. It was built, as the number of outside posts would indicate, to accommodate twenty families. The house was sixty feet long, forty-five feet wide, and thirty feet high. It will be seen

from the framework that there are no central posts supporting the roof. This allows a large open space of floor in the center. The whole inside of the house is left open; the apartments are indicated only by the hammock posts, and the small individual fires. They make fire in the ordinary way, by twirling a stick between the palms of the hands, and also by striking fire from two stones. They have no traditions about the origin of fire.

Food Supply. The Witoto are primarily an agricultural people. Each family has its own field in which they cultivate cassava, plantains, potatoes, pineapples, and coca. In making the field, the men cut the trees with stone axes, and the women burn the brush, plant, and cultivate the vegetables. They add fish and game to their food supply, but prefer fish to game, probably because there is less of it. They hunt together in common, and bring the catch to the chief, who distributes it equally among the families.

They capture peccaries, deer, and tapirs in a great net, six feet high and a thousand or fifteen hundred feet long, which is stretched among the trees in a suitable place in the forest. They catch the fish with spears, hooks, and nets, but for the most part depend upon poisoning the pools with the crushed leaves and roots of the babasco (*Jacquinia armillaris*). The poison is carried to the pools in baskets, which are dipped frequently into the water, and soon the dead fish are seen floating on the surface. A very effective hook is made by tying the spine of *Astrocaryum* to a stick, and baiting it with a worm. The blowgun, obiyaka, eight or ten feet in length, is made of two pieces of chonta palm (*Bactris ciliata*), grooved, polished, wrapped with a tough strip of the bark of huimbaquiro (*Bombax* or *Jacitara*), and coated with a resinous gum (*Vismia guianensis*). The arrows used with blowguns are made of chonta or patawa palm (*Oenocarpus patawa*) with a wisp of silk-cotton (*Bombax*), tipped with poison made from the extract of a tree called oipui, or made of ramu (*Strychnos castelmoeana*) and pani (*Cocculus toxiciferus*). The arrow points are cut in the making, so that they will easily break off in the wound. In hunting, a lance, moruko, is also used with poisoned tip. These lances are made of the leaf stalk of cane with chonta palm poisoned points. Eight or ten of these lances are carried in a bamboo case, the tips resting in curari poison. The spears are of three types:



Witoto Indian group, and house in process of construction

barbed, for killing the tapir; round, for use in warfare; and with a point of bamboo, for killing fish.

The women make a very refreshing drink, called hugabi, from the fruit of the kenaku palm, mixed with cassava, but they have no intoxicating drinks. They eat regularly, only twice a day; breakfast, moneñena, in the morning at daybreak, and supper, nawita, in the evening at about six o'clock or sundown. Through the day they chew the leaves of the coca plant (*Erythroxylon coca*), but take no other food. The leaves of the coca are toasted, pulverized, and mixed with the ashes of burnt leaves of another plant.

Jaliko, the Feast of the Pole. Each year at the beginning of the season for clearing and planting the fields, they cut down a large tree, and carry a section, three feet or more in diameter and fifty to seventy-five feet in length, into the house of the chief. The log is so heavy that it is always necessary for them to call upon other villages for assistance. While the men are clearing and planting the fields, the chief, with the aid of the sub-chiefs, spends his time in carving the log. The chief carves on one end the bust of a woman with her hands crossed on her breast. The sub-chiefs hew off the top of the log for a dancing platform, and paint on each side a great snake, the anaconda, in three colors: red, yellow, and black. At the end of eight months, when the first fruits are ripe, a great feast, called Jaliko, the feast of the pole, is given.

When the time arrives, the chief appoints six men to collect the food and drink for the feast. Two men wear white bark cushmas painted in front and back with jaguars; two wear cushmas painted with poles and branches; and two wear cushmas painted with birds. All of the men wear bark masks with only their eyes visible. Early in the afternoon of the day of the feast, these six men go armed to the houses of the sub-chiefs. The two representing the jaguars carry long poles with hooks on the ends, and proceed to tear off the roof of the house; the two men painted with poles and branches carry stone hatchets, and begin to cut down the posts of the house; and the two men painted with birds go into the fields, and begin to destroy them. In order to prevent this wholesale destruction of the houses and fields, the families hasten to give the men a great abundance of food of all kinds: fruit, cassava bread, meat, fish, and nuts, which they carry to the chief's house

where the dance and feast are to be held. In the evening all the village people gather at the chief's house for the feast and dance, which lasts all night and until late in the afternoon of the next day. The women dance on the ground, while the men dance on the top of the log. Each man supports himself with a pole, which he holds upright in front of him with both hands, facing the women. One man leads the singing for the dance, while the others join in at the chorus. When the leader is tired out, another takes his place. The burden of the song is in adoration of the sun, moon, plants, fruits, and animals. The rhythm of the dance is accentuated by the sound of rattles, made of nuts, worn by the men above the calf of the right leg. The dance of the men on the log is merely a shifting from one foot to the other, emphasizing the beat with the right foot.

After the dance is over, the chief cuts up the image of the woman and gives a piece to the head of each family present, who takes it home and burns it in his own little fireplace. The chief himself burns the head of the image.

The feast appears to be a kind of harvest thanksgiving ceremony, but the exact meaning of the different elements is difficult to understand. Their dances and feasts are usually held when the different fruits are ripe, or when certain fish come up the river. During these festive dances, other households are invited and all exchange wives during the dance, with the exception of the chiefs. Two of the best musicians lead the dance. Each has attached to his arm a bunch of feathers, and carries a Pan's pipe of three bamboo joints of different lengths. The music is made by each in turn blowing a single note on his pipe. The women generally dance in circles with clasped hands, and the men dance around the outside with their arms locked. The drum is not used at the dance, but only for signals and messages. The flutes made of the human arm bones of their enemies are used only for personal amusement, and played when the individuals who made them are alone.

Other Amusements. Among most tribes, the boys find amusement in shooting with the bow and arrow, but the Witoto do not use these and the boys must find amusement in some other way. They make wooden tops, *humuraka*, about six inches long and one and a half inches thick, with a notch at one end, and a point at the

other. A string is wound around the top, and it is thrown up in the air. The men and boys also play ball. They make a large rubber ball, *uwika detirowi*, about six inches in diameter, and all play together around the central plaza. The ball is tossed into the air and must be caught on the knee of the right leg, bounced into the air again, and received in the same way on the other side. The hands must not be used except in guiding the ball to the knee. These ball games between villages last four or five days. They play ball in the afternoon, and dance at night.

Dress and Ornamentation. No clothing is worn indoors, but the men, when on the trail, hunting, or working in the fields, wear a breechcloth of bark. The women wear narrow woven cotton bands on the wrists and ankles. Neither men nor women wear paint or are tattooed. The men pierce the ears and the alae of the nose, for the insertion of feathers, but the septum is not perforated. The sub-chiefs pierce their ears and the alae of the nose, and wear a wooden plug in the middle of the lower lip. The chief wears, in addition, two extra lip plugs one on either side of the center. The plugs are sometimes made of silver or gold. The sub-chiefs wear jaguar tooth necklaces; in case of trouble between the chief and a sub-chief this necklace is taken away by the chief, and the sub-chief is thus disgraced. The extra lip plugs are the only evidence of position worn by the chief. As there is no clothing or headdress worn, these are the only marks of distinction within the tribe.

Marriage. The Witoto marry outside the village, but within the tribe. No one, except the chiefs and the medicine men, is allowed to have more than one wife. The medicine men are allowed to have three or four, while the chiefs may have as many as they wish. The sons of chiefs must always marry the daughters of other chiefs. The three or four hundred people living in one group are considered as one family, and all of the children as brothers and sisters.

When a young man wishes to take a wife he speaks to his father, who makes arrangement with the father of the girl he desires; but if the boy's father is dead he goes to the chief instead. The boy makes a present of tobacco to the chief, works for the girl's father, and gives him tobacco and coca. The tobacco and coca for the father are brought in, and left on the floor of the house. At the same time, the boy brings rare fruits and game, and a cer-

tain kind of wood, popai, which is very much prized, and presents them to the girl's mother. The food is then divided among all the families in the house, and if all partake, it is considered a sign that they agree to the marriage. The boy must then remain in the house that night, and sleep alone. The next day the girl's father sends her to the boy's household where she lives with the family until after puberty, when the young man takes her to his own apartment in the family house of his father. If a wife should prove unfaithful, she is killed by her husband.

When a woman is about to be confined, she retires to the forest alone, and returns with her child. She is given presents by all of the other women of the household. When a chief's wife has a child, the medicine men come to the house; the eldest takes the child in his arms, sings and chants a ceremony, then passes it to the next, and he to the next, continuing throughout the night. This ceremony is intended to keep the evil spirits away from the mother and child, and to give the child good health. The child is named by the father and mother, without any ceremony. There seem to be family and tribal names. Jagi Huari means "beads about his neck." His son's name is Guaita Huari — Guaita means "to catch." The name Huari is never found in any other sub-tribe, and the name Jagi can never be used by any other family. Men are sometimes given nicknames of animals or birds. Some examples of individual names are as follows:

Sebua sub-tribe: chief's name, Sorroginema; wife's, Jenadeño; and son's, Irimamuy. Man's name, Binarima; wife's, Bogeirei; and son's, Keifo. Man's name, Siaguide; wife's, Nanimegoqueina; and son's, Boiriyama.

Kabduya sub-tribe: man's name, Suyei; wife's, Setiniyei; son's, Kitibequi; and daughter's, Sirequitofeño.

Monunisaya sub-tribe: man's name, Jairebiuneima; and wife's, Diguidami.

Nongoni sub-tribe: man's name, Yidima; wife's, Sanuaño; son's, Cani; and daughter's, Cayei.

The families are always small, in spite of the common desire for children. There are seldom more than three or four children born in one family. The members of the family sleep in individual hammocks; the father on one side of the apartment, the mother on the other, with the children in the back part, and a fire in the middle.

The Dead. When a chief dies he is wrapped in a new hammock with all his possessions and buried in the center of the floor of the house, then the people move away, and build another house. When any other member of the tribe dies, he is buried under his own fireplace, and the house is not deserted. The grave is dug about five feet deep, and the body placed in a sitting posture. A man dies in his hammock. Each family places some offering in the hammock, then it is bound around the corpse with a rope, and placed in the grave with all his possessions. His dogs and pet animals are buried alive, or later when caught are killed and buried.

If a father and mother both die and leave young children, they are buried alive with the mother. Jagi knew of one case where both parents had died and had left three little children, the mother dying shortly after the father. The eldest child, about eight years of age, overheard the people talking, and learned that the children were to be buried alive, so he quietly escaped to the forest; but the other two were put in the grave alive with the mother and covered up with earth. Jagi was present, and witnessed the burial.

Two or three months after a man's death the people of his house hold a fiesta and dance in his honor. When a man dies, his widow cuts off and burns the bands which are put on her ankles and arms when she is promised in marriage. If she has great affection for her husband, and thinks she will never want to marry again she cuts off her hair as a sign of mourning. When a wife dies, a man shows no signs of grief or mourning.

If any one is suffering from some incurable disease which renders him helpless, or from some unknown serious disease, he is buried alive. Ordinarily they take exceptionally good care of the aged, because they are considered wise, and their counsel is desired.

Medicine Men. When anyone is sick, the members of his family give him such remedies as are commonly known among the tribe. If he does not recover and the sickness proves serious, the *aimi*, or medicine man, is called in. He gives no medicine, but treats the patient by magic and manipulation. He takes ground tobacco leaves, boils them in a small cooking pot, squeezes out the liquid, boils it again until it is a thick syrup, and then mixes with it water and the ashes of the *popai*. He dips his fingers into the liquid, and puts them in his mouth. In a few minutes he is overcome with

dizziness and sickness and in this condition is able to discover the disease. After a half hour he takes tepid water as an emetic. He has now discovered the disease, knows what it is, and where it is located. He uses no drugs, but begins at once his manipulations. He rubs the patient, always in the direction of the extremities, and blows the disease away from between his hands. He presses with the heels of the hands, rolls his knuckles, and rubs with his fingers; as he finishes rubbing, he brings his hands together at the top of the patient's head, or at his toes, or his finger tips, and then blows away the disease. To insure the safety of the patient from the return of the disease, he blows upon the hammock.

The medicine man operates in the middle of the big house. The patient is brought in, laid on a mat, or swung in a hammock. If, however, the patient is too sick to be moved, he may be treated in his own apartment. About ten feet inside of the door of the big house there is a pole on which hangs a bag of coca, at the bottom of which is kept a small pot of liquid tobacco. The medicine man, in taking his tobacco, squats before this pot with his back towards the center of the house. If the patient is seriously sick, the medicine man may remain with him for several days blowing away the disease. Besides this kind of treatment, the medicine man is able also to reduce fractures, using tablets of wood as splints; to lance ulcers; to put on plasters of various kinds; and to cup the back and shoulders for diseases of the chest.

When a medicine man is sick he attributes his sickness to some powerful medicine man in another tribe. In cases of epidemics the medicine man goes from house to house, and if many die he recommends that they burn the houses and move away. In all cases death is due to the influence of some other medicine man, and the local medicine man is not held responsible. The medicine man is paid for his services in tobacco, coca, and jaguar teeth. When a child is sick its mother eats nothing but cassava. If anyone is near to death, the other members of the household sit nearby and sing. In case of smallpox they separate the sick, and send all the unaffected people away to the forest during the continuance of the disease.

Ordinarily the medicine man does not reveal the sickness that he has removed from the body of the patient, but in certain cases of severe illness he bites and sucks from the body of the patient a

small object of gold, silver, wood, or bone, shows it to the chief, and says that he has taken it from the body. The chief takes it, shows it to the patient, and then returns it to the medicine man, who puts it in his mouth. This is the evil that is causing the disease, and since it has been removed, the patient says that he feels better, and usually recovers.

The medicine man works in the fields as an ordinary member of the tribe; but he is respected by his own tribe, because he is able to cure diseases, and he is feared by other tribes because he is able to send diseases upon them. A medicine man is not able to send any particular disease, but just disease of some kind.

The position of medicine man is inherited. The eldest son is always supposed to have the power to heal. From childhood he is not allowed to eat certain kinds of food, or to do certain things. He must not eat the fat or flesh of animals, or certain fruits. He may eat small birds, small fish, and cassava, the common staple food. He uses a great deal of tobacco. The boy is taught by his father, but he is not allowed to practise until after his father's death. Each large house has a medicine man, but the greatest of the medicine men lives in the house with the chief.

Cosmogony. The Witoto start with the world already made, without any account of its creation. They know that the world is round from the fact that they see a circular horizon. They know also that it is flat with water all around and under it, because they have dug wells and found water below.

At death they go up to the sky from the point of departure on the top of the high mountains in the west. One time a man, after going to the top of the mountain, came back, and told the people that he saw great mountains and cities beyond, but no one else has ever gone to see them. The rivers join together, and run away into a great hole in the earth, called monokakagi, and never come back. Where the hole is, and what finally becomes of the water is unknown.

Man is an evolved monkey. A long time ago, before there was any sun or moon, monkeys came up through a hole in the earth, and after a long time some of them developed into men, while the rest remained monkeys. The Witoto were the first men. At the time the monkeys became men, there was no sun, but it came afterward from some unknown place. The animals came about

the same time that men made their appearance. Fathers tell their children stories about how the monkeys became men.

Time is counted by moons, *dawi*; and by seasons, *hwiwaraoli*; the time from one rainy season to another, or from harvest to harvest, or flowering time to flowering time.

Religion. They believe a big man, *Hosiñimui*, is in the sky, who has a long beard which reaches to the middle of his body, but has no hair on his head, and who wears the sun as a crown. When the sun goes down at night it is because he has gone to bed, and put out the light. His food is composed entirely of honey and peanuts. There is also an evil spirit, *Taife*, who has long finger nails, and may do personal injury to his victims. At death all without distinction go above in the sky, and remain there forever, inactive. The soul of the dead, *hursesima*, comes back to earth at times, and walks around at night.

Warfare. The Witoto are not a war-like people, but are forced at times to go to war, and at such times are well organized under the chief. When they want to provoke war with another tribe, some members of the war party go to the other tribe, and give a man *coca*; when he begins to eat it, they hit him on the head with a stone hatchet; kill him, cut off his head, and carry it home to eat. To secure volunteers for such a war, the chief places on the ground a pot containing the extract of tobacco. He then makes an address, dips his fingers into the liquid, places them on the tip of his tongue, and calls upon all who are willing to go to war to do the same thing. This ceremony is in the nature of an oath, and is often used on other occasions. It is the most sacred oath, and is never broken.

When they kill men in war they cut off the heads and the arms, and carry them home, where they eat the flesh of the heads, throw away the skull, and make flutes of the arm bones. The heads are boiled, and the teeth taken out and made into necklaces. The flesh is eaten by the old men, and the leader of songs, *nugoitimoi*. Recently Torres' band of Witoto Indians made a raid against the Andoke, killed three men, cut off their heads, ate the flesh, then placed the skulls on top of poles in front of their own houses. Jagi says this is not the usual practice. Sometimes the skulls have the facial part broken away, and the rest hung to the roof over the chief's quarters.

When a chief dies or is killed, his own people take out his teeth, and burn or break them, for fear some enemy may dig up the body, and take the teeth for a necklace. When prisoners are taken, they are brought home, and killed in the plaza by an executioner, who uses a lance or a stone hatchet. Captured women are tied to a pole in the center of the plaza, and left there over night, when any man who wishes may have access to them, a privilege seldom accepted. The next day they are killed by the executioner.

As the Witoto have no bows and arrows, they use in warfare spears, hard wood clubs like double-edged swords, called *makana*, and stone axes. They do not use their poisoned lances or blow-guns in warfare.

It has been reported that the Witoto are cannibals, that they eat the heads, arms, hands, and feet of their enemies or undesirable

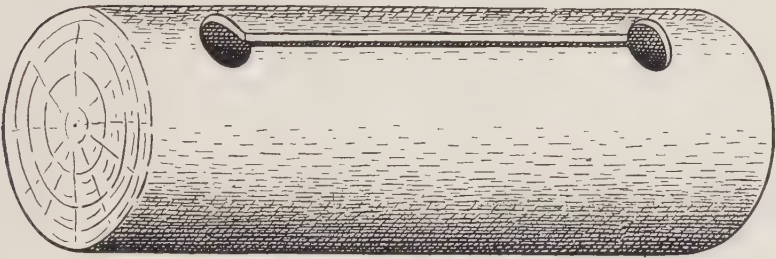


FIGURE 17

Witoto Indian drum five feet long and two feet in diameter made from a log. The interior was burned out through the two holes and connecting slit

persons coming among them; but they eat only a part of the flesh of the head, and that for revenge, and for the purpose of inspiring fear in their enemies. For the same reason, they make flutes of the bones of the arm.

Signal Code. The drum, *huari*, is used entirely as a means of communication. It is made of a log, five or six feet in length and two feet in diameter (figure 17). On the top of the log is a hole near each end, six inches in diameter, and connecting these is a slit, one and a half inches wide. The interior of the log is burned out through the slit and holes, and the fire controlled by blowing through the leg bone of a stork. The two sides are of different thickness, thus they produce two tones differing in pitch. For sending messages two drums are used, and four tones are furnished,

differing in pitch and quality. The operator stands between the two logs, and beats them with his rubber-tipped stick, huakitchu. His code is based upon these four different tones, the time between his strokes, and the number of blows. The drum is kept in the chief's house, suspended from the roof or is hung by lianas from a tree outside, and kept from swinging by cords attached to a buried log.

The Witoto have been made notorious on account of the "Atrocities of the Putumayo," made public a few years ago by Sir Roger Casement. The real condition of affairs in the Putumayo region, and the treatment of the Witoto by rubber gatherers could not well be exaggerated. Hearing of these misdeeds of the rubber gatherers, I reported them to the Peruvian Government and to my own, some two years before Sir Roger Casement had heard of them. The Peruvian Government immediately stopped the atrocities, as is evidenced by the fact that Sir Roger presents only reports of what had happened, not anything that he himself saw.

Grammar. In order to form the comparative, maka, much, is prefixed to the positive. There is no superlative form.

COMPARISON

| | | | |
|--------|----------|-------|--------------|
| Good | mari | Bad | marineti |
| Better | makamari | Worse | makamarineti |

USE OF POSSESSIVE ADJECTIVES

| | | | |
|------------|------------|---------------|-----------------|
| My father | kwaimoa | Their house | imakahopo |
| My mother | kwaiñoño | Our house | kaghopo |
| My house | kwaihopo | My good house | knaihopomari |
| His house | baimwihopo | His good dogs | baimakotikomari |
| Your house | ohapo | Large house | ijuihopo |

PRONOUNS

| | | | |
|-------------------|-------------|--------------------|---------------|
| I | kwe | We | kai |
| Thou | o | You | omo |
| He | o | They | omo |
| She | ohe | | |
| This | naimwe | My | knai |
| That | biana | Your | ohe |
| Which | muka | This | bai |
| Who | bumwa | Our | kai |
| What is this? | hadiyabuwi? | What man is this? | wimabuo? |
| What did you say? | nupodo? | Whose dog is this? | biyihikobuwi? |

DECLENSION

| | |
|--------------|-----------|
| The man | wigma |
| For the man | wigmayi |
| With the man | wigmadiga |

Vocabulary.

THE FAMILY

| | | | |
|-------------|---------|----------|----------|
| Man | igma | Aunt | iusunu |
| Woman | rino | Brother | ama |
| Husband | kwi'ini | Sister | bunu |
| Wife | kwi'ai | Son | hito |
| Grandfather | iusuma | Daughter | hisa |
| Grandmother | iusunu | Boy | iurotiko |
| Father | mota | Girl | hisa |
| Mother | e'i | Baby | hamadi |
| Uncle | iusuma | | |

CARDINAL POINTS

| | | | |
|-------|-------------------|------------|---------|
| North | oguayak | Zenith | haaka |
| West | bibemu | Nadir | ana |
| South | oyekodubehaukunak | Up river | avibeni |
| East | biye | Down river | wireni |

COLORS

| | | | |
|-------|----------|--------|----------|
| White | insereti | Blue | mokoreti |
| Black | hitereti | Yellow | hosi |
| Red | hiyoreti | Brown | hetuda |

NUMERALS

| | | | |
|---|------------|-----------------|-----------------|
| 1 | dahi | 5 | dabakwiro |
| 2 | mena | 10 | nangwahibekwiro |
| 3 | dahiyamand | 20 | aikwiro |
| 4 | naka'amak | Above 20 (many) | daheseti |

ORDINALS

| | | | |
|-------|------|------|---------|
| First | dahi | Last | irakena |
|-------|------|------|---------|

They count their fingers, beginning with the little finger of the left hand. For the right hand, the same names are used as for the left hand, except for the thumb which has a new word, ten. From ten to twenty the toes are counted in the same order as the fingers, with a new word for twenty. No other words are used for numbers except the indefinite word for a great number.

VERBS

| | | | |
|-------|-----------|--------|-----------|
| Ask | hikanaiti | Know | iunati |
| Break | jēdi | Make | huinoka |
| Bring | ati | Paint | hidi |
| Burn | osidē | Play | dēterowi |
| Catch | gaita | Put | honi |
| Come | biti | Reply | iu'aidoti |
| Cook | rokoki | Return | biti |
| Cry | kweri | Roast | ruika |
| Cut | koaiti | Run | arikina |
| Pie | foodaiti | Say | nupo |
| Dig | ekono | See | kiodo |
| Drink | hiro | Send | orētati |
| Eat | guñu | Sew | tifoka |
| Fall | iu'aidi | Sing | rono |
| Fly | fēdi | Sleep | inidi |
| Give | haisika | Smell | ñuita |
| Go | makariti | Speak | ñakti |
| Grow | moni | Suck | dīsenhiro |
| Have | jino | Swim | idi |
| Hear | kakadi | Take | hiro |
| Hunt | henodi | Walk | haiti |
| Judge | hifanēti | Wash | hokoki |

ADDITIONAL WORDS

| | | | |
|-----------------|------------|----------------|-------------|
| About | iarēdi | Death | baidi |
| Bad | marinēti | Dog | hiko |
| Ball, rubber | uika | Dog, <i>f.</i> | hikoeriño |
| Beads | jagi | Dog, <i>m.</i> | hiko'oima |
| Better | makamari | Dogs | hikotiko |
| Bird | ofoma | Drum | wari |
| Bird, <i>f.</i> | ofomaeriña | Drumstick | wakitcu |
| Bird, <i>m.</i> | ofomaoima | Dry | safrenēti |
| Birds | nanofoma | Empty | heriaiñoti |
| Blowgun | obiyaka | False | benagnoyoti |
| Chicha | ēimo | Feast | jaliko |
| Chicha, fruit | hugabi | Fever | duiko |
| Chief (name of) | Ijama | Full | monitaiti |
| “ “ “ | Kutunen | Good | mari |
| “ “ “ | Rianumui | Green | hāmadi |
| “ “ “ | Amigo | Hard | kwenerēdi |
| “ “ “ | Mampi | Here | benoma |
| “ “ “ | Ifi | Hot | usirēti |
| Cold | rosirēti | House | hopo |
| Corn | petcäto | Jaguar | hiko |
| Day | aje | Lance | suda |

| | | | |
|----------------|------------|------------------|----------------|
| Large | ijui | Spirit, evil | taife |
| Late | nawiti | Spirit, good | hosinimui |
| Many | aka | Stone | nofuika |
| Medicine man | ēima | Straight | hanorēdi |
| Moon | hwibui | Sun | hitoma |
| More | aka | Sweet | niaimeridi |
| Much | aka | Tapir | hegēdima |
| Naked | duñoka | Tapir, <i>f.</i> | hegēdima'erino |
| Needle | ēgido | Tapir, <i>m.</i> | hegēdima'oima |
| Negative | inēti | Tapirs | hegēditiko |
| Nest | hoho | There | hipihi |
| Night | nagone | There, distant | baini |
| No | damaiti | Thief | fuiki |
| None | inēti | Tobacco | jera |
| Nothing | jidi | Tomorrow | ikomoni |
| Old | iuaikeroma | Top | humuraka |
| Open | ekono | Tree | amina |
| Opposite | oruikadibi | Tribes (name of) | Laboyano |
| Paddle | faijahi | “ “ “ | Sebua |
| Pain | isirēdi | “ “ “ | Huraya |
| Palmfruit | kenaku | “ “ “ | Monunisaya |
| Partridge | kotoma | “ “ “ | Nongoni |
| Pig | aimo | “ “ “ | Kabduya |
| Pig, <i>f.</i> | aimo'erino | “ “ “ | Haiyofo |
| Pig, <i>m.</i> | aimo'oima | Truth | wanai |
| Pigs | togaimo | Turkey | muidoki |
| Poison | aupui | Ugly | herēdi |
| Quickly | arikenā | Warm | ikāsiti |
| Rain | dēdi | Wet | riādi |
| Raw | uwēnēti | Where | nifuē |
| Ripe | hiēdi | Wide | adjuēmi |
| River | ije | Wind | aifui |
| Same | adinomo | Wing | riaiko |
| Singer | ñugoitemai | Worse | makamariñeti |
| Sky | mona | Yes | hē |
| Small | hānorēdi | Yesterday | nafātōni |
| Soul | hursēsima | | |

MIRANHAN GROUP

Vocabulary. The short vocabulary here appended was obtained from a small boy at a rubber station on the Manu River. He had been captured sometime before, but had not learned to speak Spanish well enough to give me any information about his people, nor even where they lived. The man who had him did not know where he came from, or to what tribe he belonged.

THE FAMILY

| | | | |
|--------|--------------------|-------|------------|
| Man | kwakpi | Son | itsēmeni |
| Woman | kwatei | Child | māni |
| Father | takani, te'iha | Baby | tcowapekwi |
| Mother | kwa'atro, kwa'atco | | |

PARTS OF THE BODY

| | | | |
|----------|------------|-----------|-------------|
| Head | mānikwi | Chest | māpahi |
| Hair | mānikwahi | Abdomen | māpahi |
| Cheek | mānipa | Arm | mānahrenkwa |
| Chin | mākwatsahi | Upper arm | mānehikwa |
| Eye | mā'atci | Lower arm | māonsik |
| Eyebrow | māhe | Hand | māonse |
| Eyelash | mā'atcitci | Finger | māonskwa |
| Ear | mānimi | Nail | māonsikwani |
| Nose | mātihigo | Hips | mākipa |
| Mouth | māhi | Leg | māt'tia |
| Teeth | mākwahi | Upper leg | mākipa |
| Tongue | mānihikwi | Lower leg | māpateri |
| Neck | mānikwa | Knee | mātoñahi |
| Throat | mākortotsa | Ankle | mättia |
| Shoulder | mākomavik | Foot | mättiapa |
| Back | māpaseria | Toe | mättikwa |
| Side | mām'miko | Joint | mākomivik |

VERBS

| | | | |
|--------|--------------|-------|------------|
| Bite | meikoi | Rise | kwakwamēni |
| Come | kwaditcitci | Run | matini |
| Drink | vēhēterik | Sit | kwatakivi |
| Eat | kwamematcōwa | Sleep | kwakikwa |
| Paddle | māpotoa | | |

ADDITIONAL WORDS

| | | | |
|----------|-----------|-----------|-------------|
| Dog | oipi | Floor | iumainkwa |
| Cat | i'tkernek | Canoe | mēina |
| Hog | māni | Paddle | potokwa |
| Jaguar | hoipi | Pole | katēhika |
| Parrot | waro | Day | mepa |
| Turkey | nimiko | Night | kaveni |
| Cock | kwapi | Tomorrow | pekorekan |
| Hen | katarāka | Good day | īmīnīk |
| Yucca | waheriki | Thank you | mēimivi |
| Plantain | ihiko | Yes | eheh |
| House | ha'antc | No | tsatanikato |
| Roof | iume'eko | | |

TUPIAN STOCK

TIATINAGUA

Distribution. The Tiatinagua occupy the territory south of the Madre de Dios between the Inambari and Beni Rivers, particularly along the Tambopata, Heath, and Madidi Rivers. They number at present five or six hundred, and are known locally by various names: Atsahuaca, Yamiaca, and Guarayo or Huarayo. The term Huarayo has no ethnic value, but is a general name applied to all savages, as the term Chuncho is used in some other regions. These Indians speak a dialect of the Tupian language.

Organization. The Tiatinagua have a very loose tribal organization. Each group has a head-man or chief, who leads his people in their wanderings from their permanent villages in the interior to their hunting places. Two or three families live together in small palm-leaf houses. They build temporary shelters on sand bars, along the rivers, by leaning palm leaves against a bent pole. They travel for the most part on foot, crossing the rivers on balsas, made of two logs fastened together by chonta palm pins driven through them. They make no canoes.

Food Supply. Around their permanent homes in the forest they make great clearings where they grow corn, cassava, sweet potatoes, and plantains. Along the rivers, where they hunt and fish at certain seasons of the year, they plant bananas and plantains in a small clearing out of sight of the river. These clearings are so well secluded that a traveler would not be able to find them without knowing the location or clue. The traveler, seeing a single banana or plantain tree standing at the river bank, wonders how it happened to grow there. If he were to land, and make his way into the forest behind this tree, he would find plenty of fruit.

Plantains are eaten raw, or are roasted when green or ripe. The rind is split by biting it longitudinally, and is removed with the fingers and teeth. Then the plantain is placed in the fire, and roasted on hot coals. They make very little pottery, and often use a joint of bamboo, instead of a cooking pot, especially

when they wish to cook fish. They cut a joint of green bamboo of sufficient size, place the fish inside, and throw the joint into the fire. The fish cooks before the bamboo burns through.

The men make fire by twirling a stick between the palms of the hands in the ordinary fashion. They do not grow tobacco, or use it in any form. The men hunt, fish, and make balsas. The women clear, plant, and cultivate the fields, build their houses and shelters, gather fruits and nuts, and even make bows and arrows for the men. The men hunt in large numbers, and divide their catch. The common method used in hunting most of their game is the



FIGURE 18
Tiatinagua woman making cornmeal

drive. They encircle a wide area, and drive game towards a common center on high ground, where the animals are killed with bows and arrows. They have no hooks, but are very successful in shooting fish, and sometimes drive them into a trap made by planting sticks across a side stream.

The Tiatinaguas are the most expert in the use of the bow and arrow of any of the tribes visited. The bow is held in the left hand, with the arrow on the left of the bow, and under the forefinger; then the arrow is held on the string with the thumb and index finger, and pulled with the other three fingers on the string. They pull across the breast with the head turned to the left, and the arrow below the line of the eye. In shooting at a target, six inches in diameter, at a distance of twenty-five yards, they made

an average of a direct hit once in five times, with the other arrows close to the target. They use bows and arrows about six feet in length.

Dress and Ornamentation. The chief wears a shirt made of woven wild cotton while all the other men wear a close fitting sleeveless bark shirt which comes down nearly to the knees. The women wear a piece of bark as an apron, hanging in front from a belt or string tied around the waist. The children wear no clothing until after puberty. They dye their clothing, and paint their bodies, black with wito and red with arnotto. Women and children wear necklaces made of the teeth of monkeys, peccaries, and other animals. The men sometimes wear a crescent-shaped nose ornament made of mother-of-pearl, and certain men wear two or three bright feathers under one arm. Neither men nor women pierce their ears or lips. The heads of the children are flattened by tying a board on the forehead, as is the custom already described among the Conebo.

Marriage. The chief alone is allowed to have more than one wife. They marry within their own tribe, but outside of their own village, and bring their wives to live in their villages. There is no marriage ceremony, and as far as could be learned, only mutual consent between the two parties directly concerned is necessary. If a woman dislikes her husband or his people, she may return to her own people, without restraint. Wives are very well treated, yet a husband may sell his wife or his children. Marriage cannot take place until after puberty ceremonies have been performed for both boys and girls.

When puberty arrives, a feast and dance takes place. The old women take the girls aside and cut the hymen with a bamboo knife. The men take the boys at puberty, and cut the frenum preputii with the same kind of bamboo knife. When a husband dies his widow returns to her own people, and lives with her brother. The chief may have five or six wives, but must take them from other Tiatinagua villages.

When a woman is to be confined she retires into the forest with two other women as assistants. After a suitable place is selected, one woman sits down with her back against a tree and takes the patient on her lap, locking her arms under those of the patient, and holding her firmly in that position while the other woman assists in the delivery.



Tiatinagua Indian bark cushma, necklaces, headdress, and feather ornaments. (1/10.)

The Dead. When a man dies in a village the body is taken to the forest, and buried at full length. His clothing, bows, and arrows are buried with him. If a man dies while traveling or encamped along the river, the body is thrown into the river without ceremony.

A few days after we left one Tiatinagua village, a Peruvian, Sr. Galvez, who had formerly visited the village, came back to it. For some unknown reason, the Indians killed him, cut off his head, and threw the body into the river. It is not known what disposition they made of the head. When our canoemen were returning up the river, they found a skeleton on a sand bar which they identified as that of Galvez by means of his American shoes. The fish had eaten all the flesh from the bones, but the boots were still in place.

When one is sick with some incurable disease, or is thought permanently helpless, the men tie his hands and feet together, and throw him into the river to drown. They believe that all sickness comes on account of cultivation, as there is no sickness in the forest. When there is an epidemic, they segregate the sick. Some time before our visit, there had been an epidemic of sore eyes, and half the people were affected. The diseased ones were separated, while the others went away into the forest.

Religion. They start with the world in its present condition, and have no traditions of a creator. They believe in two separate spirits. A good spirit, Itosiga, is in the form of a very large white man, with a long black beard who lives in the depths of the forest, where only a few very old men have seen him. His only function is that of causing the growth of plants. He is not worshipped or held in any reverence. The other spirit, Ikwikwi, is in the form of a small black man, with black beard. He also lives in the forest, and occasionally is seen. When he is heard coming through the bushes, they shoot arrows at him, and drive him away. He is not evil, and does them no harm, but they feel uncomfortable when he is near.

Personal Appearance. When we visited the Tiatinagua village at La Torre, on the Tambopata River we found the people healthy and in good physical condition. Apparently, they take less care of their personal appearance than any of the other tribes. They allow the hair to grow long, and do not extract the scattered hairs on the face or body; consequently they appear to be much more

hairier than any of the other tribes. The list of physical measurements will reveal a marked difference between the Tiatinagua, and the Panoan and Arawakan groups.

The Tiatinagua, while not differing greatly in stature, have very slender bodies, long faces, and long heads. They have the lowest index of any of the groups, 76.31. The minimum frontal measurement is the lowest of all, and there is a marked depression at the temples. While they have the long face and long head, they have, at the same time, the broadest nose of any of the tribes measured, which may indicate that some method of artificial flattening is in use.

Grammar. The masculine is formed by adding yawi to the noun, and the feminine by adding pona. The plural is formed by adding kematine to the singular.

PRONOUNS

| | | | |
|------|-----------|------|-------|
| I | eya | We | dekya |
| Thou | ikwanaiyi | You | dekya |
| He | iyawi | They | dekya |
| She | iwenasi | | |

Vocabulary.

THE FAMILY

| | | | |
|-------------|------------|----------|--------|
| Chief | otonia | Uncle | bapba |
| Man | deha, yawi | Aunt | toto |
| Woman | ipona | Brother | koki |
| Husband | bekopu | Sister | ohi |
| Wife | ikuyi | Son | tcowa |
| His wife | alwanasi | Daughter | icewi |
| Grandfather | hoasi | Boy | ibakwe |
| Grandmother | canasi | Girl | ipona |
| Father | kaka | Infant | icowi |
| Mother | nai'ig | | |

PARTS OF THE BODY

| | | | |
|-------|---------|----------|-----------|
| Head | iyohwak | Teeth | ese |
| Hair | iohwaña | Tongue | yana |
| Face | ikohwa | Shoulder | ibahak |
| Eye | ikohwa | Back | itna'asa |
| Ear | icahak | Side | ithohanic |
| Nose | ekwi | Breast | ekopeci |
| Mouth | inama | Arm | iya |
| Lip | ikwasa | Elbow | wacu |

| | | | |
|--------|-----------|---------|------------|
| Hand | ime | Knee | ocaha |
| Palm | imehoto | Ankle | ikibocahi |
| Finger | imesis | Foot | ihiohu |
| Nail | imekica | Toe | ihiohis |
| Thumb | imeyaiyai | Sole | ihiohukahu |
| Index | imekisa | Stomach | mahi |
| Leg | ikisi | | |

COLORS

| | | | |
|-------|--------------|--------|------------|
| black | katagwa | red | kaokwuiigi |
| blue | katawakiheni | white | kaocini |
| green | katawa | yellow | hawahawa |

NUMERALS

| | | | |
|----|--------------|----|-----------------|
| 1 | owi | 12 | tiyehipa |
| 2 | bikapiai | 13 | owitahoho |
| 3 | bahipiep | 14 | owitahawa |
| 4 | bekadepiai | 15 | owikacici |
| 5 | iamatamata | 16 | iyisamahow |
| 6 | ai'ipiep | 17 | owitahoakikici |
| 7 | bikanipiai | 18 | iyidakawadakawa |
| 8 | bikapiyohuma | 19 | diyikini |
| 9 | ki'ipiha | 20 | i'isawani |
| 10 | i'iamatamata | 21 | i'iniweyakakiko |
| 11 | wanta | 22 | eaniwëyakakiko |

VERBS

| | | | |
|-------|--------------|--------|---------------|
| Ask | woihaha | Go | pokihey |
| Break | isahakwi | Grow | powahi |
| Bring | yekwi | Have | akwikayani |
| Burn | ewahakwi | Hear | hacahak |
| Buy | ehehaikwi | Know | habawikaña |
| Call | gowikwi | Make | tiotikwi |
| Come | fuekwi | Play | mahamaha |
| Cook | ekwakwi | Put | heakikwokwama |
| Cry | ta'akwi | Rain | enahwa |
| Cut | ahakwi | Reply | soiha'akwi |
| Die | manohe | Return | fuinahi |
| Dig | tiokwi | Roast | nowakwi |
| Drink | yene | Rob | sikanto |
| Dry | hokaya | Run | kwahikwahi |
| Eat | itcahikaha | Send | pokimi |
| Fall | hawitcakwihi | Sew | sokokwi |
| Fly | kwakwesani | Shoot | pohoheti |
| Give | kiakwi | Sit | aliokikwi |

| | | | |
|-------|-------------|-------|----------|
| Sing | isawahki | Swim | besani |
| Sleep | kakawi | Take | icikwi |
| Smell | uciwicini | Thing | keawiya |
| Speak | mimikwi | Walk | pokikwi |
| Sting | ha'akwakwi | Wash | cakwakwi |
| Suck | hekibibikwi | | |

ADDITIONAL WORDS

| | | | |
|-----------------|---------------|--------------|-------------|
| Above | biäkwa | Hand | keakaha |
| All | pokohiwi | Hat | ehyauha |
| Arrow | emehi | Here | andikwi |
| Balsa | ewisipi | High | kiau |
| Bark cushma | nohwa'aki | Hot | tcätiyo |
| Bark for cushma | tcapaka | House | iking |
| Basket | icaha | My house | ikwayiki |
| Bird | tsamapwi | Hunger | hiakwi |
| Blind | kowamihi | Knife | eipi |
| Bow | weya | Late | sidia |
| Breakfast | mekawaka | Leaf | chawiñi |
| Canoe | kwakba | Left | icañi |
| Cloud | bo | Light | sidia |
| Cold | tcäiwi | Little | oipohwi |
| Corn | ciki | Long | hoano |
| Deaf | keañiñi | Machete | ba |
| Day | hapohwakia | Many | kematini |
| Death | manwa, emano | Midday | yekohayanek |
| Dinner | kici | Moon | bahi |
| Dog | nyawewa | Much | kibutcini |
| Dove | kwibehi | Music | emiaki |
| Each | obwañi | Naked | pakimae |
| Earth | meca | Near | katepede |
| East | eiya | Needle | akiseko |
| Enemy | hahipya | Net | hietcäkyi |
| Every | kewicini | Never | kiyakwa |
| Far | kewecini | New | itcakwa |
| Fire | kwaki | Night | sinia |
| Fish | sewa | No | opwuyahwuba |
| Flesh | notci | Nothing | tcämak |
| Floor | kicika | Old | itig |
| Flower | akwikaha | Opposite | owhemihik |
| Forest | epiyo | Other | kiepiya |
| Friend | kamimiakwikwe | Oven | meci |
| Full | ceahietcka | Paddle | ehebihi |
| Gold | owi | Pain | kanei |
| Good | ei | Paint, red | atcote |
| Grief | kanehi | Paint, black | wito |

| | | | |
|-----------------|--------------------|--------------|------------------|
| Painted | hakokatanaiatcatci | Snow | nehatcicina |
| Papaya | esiya | Sour | weci |
| Partridge | koicwi | Spectacles | ikowa |
| Plantain | chagni | Spoon | oyana |
| Playa, sand bar | vichai | Stone | mei |
| Plenty | kematoni | Straight | kaminihi |
| Pole | akwi | Sun | eceki |
| Poweel | ekwik | Supper | sindia |
| Quickly | sokokwahihi | Sweet | kabitca |
| Ready | yekwohaiikwi | That | hikifoihi |
| Right | ipañi | There | wekwi |
| Ripe | inhaws | Thief | sipohwi |
| River | na'ai | Thirst | ina |
| Roof | omi | This | hikiwa |
| Root | akwisakwi | Tired | kemano |
| Roast corn | ciki | Tobacco | nabakwakwi |
| Round | ciki | Today | mikawa |
| Salt | sesasesi | Tomorrow | bikawa, mikawahi |
| Same | yekwi | Tree | akwa |
| Short | itewehi | Tree, cushma | wapei |
| Silver | ihawi | Water | ena, enaoha |
| Spirit, good | idosiga | Wet | keatco |
| Spirit, bad | imigue | Wide | ewecani |
| Sky | eya | Yes | äpweya |
| Sleepy | balahi | Yonder | ahipwehi |
| Small | keatciya | Young | ico |
| Snake | peyo | Yucca | eyi |

ATSAHUACA

Vocabulary. A dialect of Tiatinagua vocabulary, obtained from a rubber man on the Tambopata River.

FAMILY

| | |
|-------|---------|
| Man | t'harki |
| Woman | tcinani |

PARTS OF THE BODY

| | | | |
|---------|----------|--------------|----------|
| Hair | eyohwa | Teeth | isthe |
| Neck | enatek | Chin | ekwekwe |
| Face | ecimo | Arm | iya |
| Eye | etohwa | Hand | emi |
| Eyebrow | ibowa | Thumb | emetitce |
| Eyelash | itohwaya | Index finger | eme |
| Ear | ecaha | Leg | itisi |
| Nose | ewi | Foot | ehiohwi |
| Mouth | enaba | Blood | ina |
| Lip | ikwausa | | |

ADDITIONAL WORDS

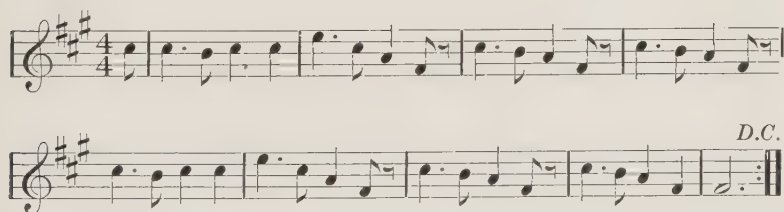
| | | | |
|-------------|-----------|---------------------|-----------|
| Bow | enaba | Monkey | isthehawa |
| Bring | tatikwi | No | tcama |
| Camote | kwaiyo | Papaya | heme |
| Candle | watika | Pig | yohi |
| Came | ete | Plantain | ikawi |
| Canoe | tcitca | Plenty | kahinso |
| Canoe | kanoahi | Poweel | ewi |
| Come | yakopaka | Rat | si'au |
| Corn | sitce | String | ot'to |
| Cushma | tharki | Tea | ita |
| Cushma bark | nauha'aki | Tree | isthehowa |
| Dead | himano | Tree for bark cloth | wapei |
| Dog | iniwewa | Turkey | ewi |
| Enemy | huanaya | Water | ena |
| Fish | sthiwa | Yes | ei |
| Macaw | kha | Yucca | eke |

MABENARO

The Mabenaro live in the interior of the forests north of the Madre de Dios River, some twenty miles from Gamatana. At the time of our visit, their villages had not been discovered by the rubber men. One of Torres' rubber prospectors, while traveling through the forest in search of rubber trees, came upon two Indian children, a boy about twelve years of age and his sister some two years younger, and carried them to his home on the Madre de Dios. We visited his place about three months later, and found the children held there as servants. When found, they were both naked, and the only thing they had in their possession was a bow and arrow. As the children had not yet learned to speak Spanish, we could obtain very little information concerning them or their language. The children were both rather tall and slender, and had no physical deformations. Their head measurements were:

| BOY | GIRL |
|-----------------------|-----------------------|
| length, 185 mm. | length, 171 mm. |
| breadth, 147 mm. | breadth, 136 mm. |
| height, 126 mm. | height, 125 mm. |
| cephalic index, 79.46 | cephalic index, 79.53 |

I was able to obtain a short vocabulary from which it would seem that their language is very closely related to that of the Tiatinagua. I did not obtain any numerals, because the children were unable to count. They seemed bright and cheerful in spite of their unhappy surroundings, and the girl was continually humming the following tune:



Vocabulary.

THE FAMILY

| | | | |
|---------|-------|----------|---------|
| Man | dia | Son | deanawa |
| Woman | wani | Daughter | ipona |
| Father | tata | Infant | nana |
| Mother | wanti | Boy | ka'abo |
| Brother | dodo | Girl | iyaro |
| Sister | doda | | |

PARTS OF THE BODY

| | | | |
|---------|-------------|----------|----------|
| Hair | iyoiña | Neck | inara |
| Head | iyoa | Shoulder | ibatha |
| Eye | ithoa | Back | ibibakwa |
| Eyebrow | iboathuna | Chest | thatha |
| Eyelash | ithokaguiña | Arm | ibai |
| Ear | ithaha | Hand | imiatsa |
| Nose | awi | Finger | imi |
| Mouth | ikwatsa | Leg | itha |
| Teeth | itsi | Foot | iwatsi |
| Chin | ithawi | | |

ADDITIONAL WORDS

| | | | |
|---------|-------------|------------------|------------|
| Bird | waboro | Parrot | kwitsa |
| Chicken | tawalipa | Peccary | wabathama |
| Cock | tawalipadia | Poweel | mapi |
| Cold | buata | Pucucunga (bird) | tintothara |
| Come | thiathia | Plantain | naha |
| Dog | niyo | River | mano |
| Duck | hohi | Tree | akwi |
| Fire | kwathi | Turkey | titobai'i |
| Forest | athe | Wangana | wabu |
| Hot | atcowa | Water | eowi |
| House | ithai'i | Wood | kwathithi |
| Jaguar | huli | Yucca | kwavia |

SOMATIC CHARACTERS

Measurements. While the measurements recorded are the ones usually taken by workers in the field, some explanation of points of departure may prevent confusion in comparisons. Those who have worked among the more primitive peoples, know how difficult it sometimes is to disarm suspicion and to overcome superstition, with regard to taking measurements, which, for accuracy, require that the instrument touch the body of the subject. It is often a very delicate matter, necessitating sufficient time to work into the good graces of the people, and to secure their full confidence. It was always an individual matter with these people; one man would stand up to be measured without hesitation, while another would refuse absolutely, and no amount of persuasion, cigarettes, or other inducements, would overcome his prejudice. We found it next to impossible to take measurements of the women; any such suggestion was resented by the men in unmistakable demeanor. The only measurements of women obtained were those of the Witoto and Piro.

A comparison of the measurements of various stock groups reveals some interesting differences in physical development, see table 6, pages 178-9. The Witoto are the tallest, and have the longest arms and legs, and the smallest heads, faces, noses, and bodies. Their heads are the longest and lowest, giving them a height-breadth index of 86.23 and a cephalic index of 77.43. They have the least prognathism, the greatest breadth of lower face, but the lowest upper facial index, 76.63. They have an unusual span with a ratio to height of 107.3. The difference in height between men and women is 152 mm., which makes the women only 90.6 per cent of the men in stature.

The Tupian representatives, the Tiatinagua, were the shortest in stature, arms, legs, and trunk. Their ratio of span to stature is 102.3. They had the highest and narrowest heads which gave them a height-breadth index of 94.49, and a cephalic index of 76.31. They had the shortest noses, and the highest nasal index, or 92.16. The Panoan had the largest and broadest heads and faces, with

indices of 87.23 and 84.75, respectively. The Arawakan had the longest and largest bodies of all, and they were taller than the Panoan. The women of the Arawakan group measured were Piro. Comparing their stature with that of the Piro men, there is found a difference of 103 mm., which makes the women 93.6 per cent the height of the men. The ratio of the span to the stature of the women is 100.8, while for the men it is 103.7. The average cephalic index of the men is 77.43, while that of the women is 78.07. There is a very noticeable difference in ranges in the two largest groups, the Arawakan and the Panoan; they were greater among the Arawakan in every case.

EXPLANATORY

1. Age: approximate. All were adults.
2. Height: in bare feet.
3. Height to shoulder: to acromion of right shoulder.
4. Span: maximum arm reach.
5. Arm length: height to shoulder, less height to middle finger.
6. Shoulder breadth: biacromial.
7. Chest diameters: at level of nipples.
8. Length of cubit: left, over the elbow to tip of medius.
9. Length of finger: left, third, over the joint.
10. Length of hand: left, line of thenar and hypothenar eminences to end of medius.
11. Breadth of hand: left, across the knuckles.
12. Breadth of foot: left, maximum at right angles to the length.
13. Head length: glabello-occipital.
14. Head breadth: maximum.
15. Head height: auricular.
16. Minimum frontal: between temporal crests.
17. Menton-crinion: chin to hair line.
18. Bizygomatic: maximum width of upper face.
19. Bigonial: diameter between angles of lower jaw.
20. Nose height: sub-nasal point to nasion.
21. Nose breadth: over the alae.
22. Eye measurements: between the outer and the inner angles.
23. Cephalic module: average of length, breadth, and height of head.
24. $A \times 100 \div b$: measure of prognathism.
25. Facial index: menton-nasion \div bizygomatic breadth.
26. Measurements: in millimeters.

No attempt has been made to subject the measurements to a refined mathematical treatment, because the different series contain too few individuals to make the results of much value.

Thirty-four measurements were taken, twelve indices were calculated, and the average, minimum, maximum, and range determined of the following groups.

TABLES OF MEASUREMENTS AND INDICES

ARAWAKAN STOCK

Table 1. Piro, 23 males and 8 females.

“ 2. Macheyenga, 19 males.

PANOAN STOCK

Table 3. Sipibo, 14 males.

“ 4. Conebo, 3 males;

“ “ Setibo, 3 males;

“ “ Amahuaca, 2 males.

TUPIAN STOCK

Table 5. Tiatinagua, 4 males

WITOTAN STOCK

Table 5. Witoto, 5 males and 4 females.

“ 6. Comparison of Average Measurements.

TABLE 1. ARAWAKAN STOCK. MEASUREMENTS*

| MALES | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|-----------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Age | 38 | 25 | 30 | 55 | 35 | 40 | 30 | 24 | 33 | 25 | 3 |
| Height | 1640 | 1580 | 1580 | 1530 | 1635 | 1620 | 1650 | 1610 | 1580 | 1620 | 1650 |
| Height to shoulder | 1380 | 1340 | 1320 | 1250 | 1380 | 1330 | 1400 | 1340 | 1280 | 1330 | 1400 |
| Height to middle finger | 650 | 630 | 630 | 550 | 650 | 620 | 680 | 590 | 600 | 560 | 620 |
| Height sitting | 930 | 850 | 850 | 840 | 870 | 830 | 875 | 840 | 900 | 850 | 880 |
| Height s. perct. tot. ht. | 56.71 | 53.80 | 53.80 | 54.90 | 53.27 | 51.23 | 53.03 | 52.17 | 56.96 | 52.47 | 52.32 |
| Span | 1690 | 1610 | 1650 | 1580 | 1685 | 1685 | 1690 | 1710 | 1620 | 1695 | 1750 |
| Span excess of height | 50 | 30 | 70 | 50 | 50 | 65 | 40 | 100 | 40 | 75 | 7 |
| Shoulder breadth | 373 | 370 | 400 | 375 | 380 | 360 | 390 | 380 | 370 | 370 | 400 |
| Chest diam. lateral | 300 | 270 | 270 | 285 | 290 | 280 | 280 | 290 | 285 | 270 | 27 |
| Chest diam. ant.-post. | 240 | 240 | 240 | 235 | 250 | 240 | 245 | 230 | 230 | 205 | 25 |
| Chest index | 80 | 88.89 | 88.89 | 82.46 | 86.21 | 85.71 | 87.50 | 79.31 | 80.72 | 75.82 | 92.50 |
| Cubit length | 460 | 465 | 440 | 425 | 450 | 440 | 450 | 460 | 440 | 460 | 460 |
| Hand length | 184 | 179 | 176 | 168 | 181 | 182 | 168 | 177 | 167 | 175 | 18 |
| Hand width | 88 | 80 | 85 | 85 | 88 | 81 | 90 | 80 | 83 | 78 | 8 |
| Hand index | 47.83 | 44.61 | 48.30 | 50.60 | 48.62 | 44.51 | 53.57 | 44.19 | 49.70 | 44.57 | 44.19 |
| Length mid. finger | 110 | 110 | 112 | 101 | 107 | 106 | 106 | 110 | 107 | 111 | 11 |
| Foot length | 247 | 240 | 240 | 240 | 255 | 245 | 255 | 245 | 250 | 255 | 260 |
| Foot width | 108 | 92 | 98 | 102 | 108 | 105 | 105 | 100 | 110 | 110 | 10 |
| Foot index | 43.73 | 38.33 | 40.83 | 42.50 | 42.35 | 42.86 | 41.17 | 51.02 | 44 | 43.14 | 40.33 |
| Hand grasp, r. | 37 | 33 | 30 | 35 | 35 | 36 | 30 | 35 | 30 | 27 | 3 |
| Hand grasp, l. | 35 | 25 | 30 | 33 | 37 | 32 | 35 | 40 | 30 | 30 | 3 |
| Head length | 209 | 196 | 189 | 193 | 192 | 193 | 180 | 184 | 193 | 194 | 200 |
| Head breadth | 159 | 147 | 153 | 150 | 148 | 151 | 141 | 147 | 150 | 141 | 150 |
| Head height | 136 | 123 | 128 | 140 | 131 | 135 | 134 | 131 | 142 | 135 | 130 |
| Auricular-nasion (a) | 93 | 93 | 90 | 92 | 97 | 99 | 94 | 91 | 98 | 100 | 9 |
| Auricular-prosthion (b) | 102 | 104 | 99 | 101 | 103 | 102 | 106 | 99 | 104 | 102 | 100 |
| Cephalic index | 76.08 | 75 | 80.95 | 77.72 | 77.08 | 78.24 | 78.33 | 79.89 | 77.72 | 72.68 | 79.50 |
| Height-breadth index | 85.53 | 83.67 | 83.66 | 93.33 | 88.51 | 89.40 | 95.04 | 89.12 | 94.67 | 95.74 | 86.70 |
| (a) $\times 100 \div b$ | 91.18 | 89.42 | 90.91 | 91.09 | 94.17 | 97.06 | 98.11 | 91.92 | 94.23 | 98.04 | 93.20 |
| Cephalic module | 168 | 155 | 156 | 161 | 157 | 159 | 152 | 157 | 162 | 167 | 160 |
| C. M. versus height | 102.4 | 98.1 | 98.7 | 105.2 | 96.6 | 98.1 | 92.1 | 97.5 | 102.5 | 96.9 | 98.0 |
| Menton-nasion | 114 | 111 | 121 | 121 | 120 | 121 | 112 | 114 | 129 | 119 | 120 |
| Mouth-nasion | 71 | 65 | 69 | 77 | 75 | 76 | 70 | 74 | 77 | 70 | 70 |
| Menton-crinion | 201 | 198 | 194 | 206 | 192 | 187 | 191 | 179 | 186 | 185 | 190 |
| Bizygomatic breadth | 145 | 144 | 146 | 146 | 146 | 147 | 142 | 145 | 144 | 136 | 150 |
| Facial index | 78.62 | 77.08 | 82.88 | 82.88 | 82.19 | 82.31 | 78.87 | 78.62 | 89.58 | 87.50 | 82.30 |
| Min. frontal breadth | 127 | 120 | 116 | 121 | 126 | 121 | 121 | 117 | 118 | 116 | 120 |
| Bigonial breadth | 120 | 121 | 127 | 137 | 124 | 128 | 120 | 122 | 128 | 121 | 130 |
| Nose height | 49 | 44 | 45 | 51 | 49 | 46 | 46 | 47 | 49 | 48 | 40 |
| Nose breadth | 40 | 43 | 39 | 44 | 38 | 43 | 42 | 43 | 39 | 38 | 40 |
| Nasal index | 81.63 | 97.73 | 86.67 | 82.27 | 77.55 | 93.48 | 91.30 | 91.49 | 79.59 | 79.17 | 93.70 |
| Ear height | .. | .. | .. | 68 | 69 | 65 | 72 | 65 | 67 | 64 | 60 |
| Ear breadth | .. | .. | .. | 33 | 35 | 27 | 35 | 33 | 29 | 34 | 20 |
| Mouth width | 57 | 56 | 54 | 55 | 59 | 53 | 58 | 52 | 53 | 49 | 60 |
| Eyes max. width | 102 | 97 | 90 | 92 | 97 | 99 | 99 | 95 | 89 | 97 | 90 |
| Eyes min. width | 35 | 35 | 32 | 32 | 40 | 41 | 35 | 35 | 34 | 34 | 30 |

* All measurements are in millimeters.

OF PIRO INDIANS, (23 MALES AND 8 FEMALES)

| 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | Aver. | Min. | Max. | Range |
|-------|-------|-------|-------|-------|-------|--------|--------|--------|-------|-------|--------|-------|-------|--------|-------|
| 36 | 27 | 25 | 24 | 32 | 40 | 33 | 43 | 26 | 23 | 30 | 35 | .... | .... | .... | .... |
| 640 | 1610 | 1550 | 1630 | 1630 | 1600 | 1660 | 1540 | 1580 | 1620 | 1650 | 1660 | 1613 | 1530 | 1680 | 150 |
| 380 | 1360 | 1280 | 1350 | 1370 | 1310 | 1390 | 1260 | 1310 | 1360 | 1410 | 1390 | 1344 | 1250 | 1410 | 160 |
| 650 | 640 | 590 | 610 | 640 | 580 | 630 | 550 | 600 | 620 | 670 | 650 | 620 | 550 | 680 | 130 |
| 885 | 890 | 850 | 850 | 860 | 880 | 875 | 845 | 890 | 850 | 880 | 870 | 866 | 830 | 930 | 100 |
| 3.90 | 55.28 | 54.84 | 52.14 | 52.76 | 55 | 52.71 | 54.87 | 56.33 | 52.47 | 53.33 | 52.41 | 53.77 | 51.23 | 56.71 | 5.48 |
| 740 | 1650 | 1615 | 1680 | 1705 | 1635 | 1745 | 1590 | 1650 | 1700 | 1695 | 1730 | 1673 | 1580 | 1750 | 170 |
| 100 | 40 | 65 | 50 | 75 | 35 | 85 | 50 | 70 | 80 | 45 | 70 | 61 | 30 | 100 | 70 |
| 370 | 372 | 390 | 375 | 385 | 370 | 380 | 375 | 372 | 380 | 400 | 390 | 379 | 360 | 400 | 40 |
| 300 | 285 | 280 | 285 | 290 | 275 | 280 | 290 | 290 | 275 | 295 | 285 | 283 | 270 | 300 | 30 |
| 245 | 240 | 235 | 245 | 230 | 220 | 250 | 240 | 245 | 230 | 240 | 240 | 237 | 205 | 250 | 45 |
| 1.66 | 84.22 | 83.41 | 85.95 | 79.30 | 80.02 | 89.27 | 82.75 | 85.17 | 83.65 | 81.37 | 84.22 | 83.87 | 75.82 | 92.59 | 16.77 |
| 460 | 463 | 430 | 445 | 450 | 460 | 440 | 455 | 430 | 455 | 450 | 462 | 450 | 425 | 465 | 40 |
| 180 | 180 | 172 | 180 | 173 | 184 | 182 | 172 | 176 | 179 | 173 | 178 | 177 | 167 | 188 | 21 |
| 87 | 84 | 85 | 84 | 82 | 85 | 83 | 88 | 87 | 84 | 86 | 85 | 84 | 78 | 90 | 12 |
| 8.33 | 46.66 | 49.42 | 46.66 | 47.40 | 46.19 | 45.60 | 51.16 | 49.43 | 46.92 | 49.71 | 47.75 | 47.64 | 44.15 | 53.57 | 9.42 |
| 111 | 110 | 106 | 107 | 108 | 116 | 107 | 110 | 105 | 109 | 110 | 111 | 109 | 101 | 117 | 16 |
| 250 | 245 | 240 | 250 | 255 | 260 | 245 | 253 | 245 | 250 | 250 | 240 | 248 | 240 | 260 | 20 |
| 105 | 100 | 101 | 106 | 105 | 105 | 106 | 110 | 105 | 104 | 107 | 97 | 104 | 92 | 110 | 18 |
| 42 | 51.02 | 42.08 | 42.40 | 41.17 | 40.38 | 43.27 | 43.47 | 42.86 | 41.60 | 42.80 | 40.40 | 42.77 | 38.33 | 51.02 | 12.69 |
| 36 | 35 | 32 | 35 | 33 | 35 | 37 | 29 | 36 | 35 | 33 | 30 | 33 | 27 | 37 | 10 |
| 32 | 30 | 31 | 35 | 34 | 33 | 32 | 30 | 36 | 38 | 31 | 35 | 33 | 25 | 40 | 15 |
| 209 | 203 | 191 | 192 | 182 | 194 | 204 | 193 | 201 | 188 | 181 | 208 | 194 | 180 | 209 | 29 |
| 159 | 153 | 153 | 149 | 144 | 145 | 159 | 150 | 155 | 147 | 142 | 158 | 150 | 141 | 159 | 18 |
| 138 | 129 | 134 | 133 | 133 | 139 | 138 | 141 | 138 | 130 | 134 | 140 | 134 | 123 | 142 | 19 |
| 98 | 93 | 91 | 98 | 93 | 99 | 97 | 91 | 93 | 94 | 93 | 98 | 95 | 90 | 100 | 10 |
| 102 | 103 | 100 | 102 | 102 | 103 | 102 | 100 | 101 | 101 | 105 | 102 | 102 | 99 | 105 | 6 |
| 76.08 | 75.35 | 79.58 | 78.60 | 79.12 | 74.74 | 77.92 | 77.72 | 77.11 | 78.19 | 77.34 | 75.90 | 77.43 | 72.68 | 80.95 | 8.27 |
| 86.79 | 84.31 | 88.16 | 89.62 | 92.36 | 95.86 | 86.79 | 93.99 | 89.03 | 88.43 | 94.36 | 88.60 | 89.71 | 83.66 | 95.86 | 12.20 |
| 96.08 | 90.29 | 91 | 96.08 | 91.18 | 96.11 | 95.10 | 91 | 92.08 | 93.07 | 88.57 | 96.08 | 93.26 | 88.57 | 98.11 | 9.54 |
| 168 | 162 | 159 | 158 | 153 | 159 | 167 | 161 | 164 | 155 | 152 | 168 | 159 | 152 | 168 | 16 |
| 102.4 | 100.6 | 102.5 | 96.93 | 93.86 | 99.37 | 100.60 | 104.54 | 103.79 | 95.67 | 92.12 | 101.20 | 99.17 | 92.12 | 105.23 | 13.11 |
| 114 | 113 | 121 | 120 | 113 | 124 | 120 | 121 | 117 | 117 | 112 | 112 | 118 | 111 | 129 | 18 |
| 71 | 68 | 73 | 75 | 72 | 74 | 72 | 77 | 74 | 74 | 71 | 69 | 72 | 65 | 77 | 12 |
| 179 | 200 | 205 | 189 | 185 | 188 | 189 | 205 | 203 | 186 | 190 | 191 | 194 | 185 | 206 | 21 |
| 146 | 145 | 146 | 146 | 144 | 140 | 151 | 146 | 145 | 145 | 142 | 140 | 145 | 136 | 153 | 17 |
| 78.08 | 77.93 | 82.87 | 82.19 | 78.47 | 88.57 | 79.47 | 82.88 | 80.69 | 80.6 | 78.87 | 79.43 | 81.45 | 77.08 | 89.58 | 12.50 |
| 127 | 123 | 119 | 123 | 119 | 117 | 124 | 120 | 123 | 121 | 120 | 117 | 121 | 116 | 127 | 11 |
| 120 | 120 | 132 | 126 | 121 | 125 | 128 | 137 | 128 | 123 | 120 | 125 | 125 | 120 | 137 | 17 |
| 49 | 46 | 48 | 47 | 47 | 49 | 48 | 51 | 50 | 48 | 46 | 49 | 48 | 44 | 51 | 7 |
| 41 | 41 | 41 | 40 | 43 | 39 | 43 | 44 | 42 | 41 | 42 | 40 | 41 | 38 | 44 | 6 |
| 83.67 | 89.13 | 85.42 | 85.10 | 91.48 | 79.59 | 89.58 | 86.27 | 84.00 | 85.42 | 91.3 | 81.63 | 86.59 | 79.17 | 97.73 | 8.56 |
| 69 | 68 | 67 | 72 | 66 | 64 | 66 | 69 | .... | .... | .... | .... | 66 | 63 | 72 | 9 |
| 35 | 34 | 31 | 34 | 33 | 34 | 32 | 35 | .... | .... | .... | .... | 33 | 27 | 35 | 8 |
| 57 | 56 | 55 | 56 | 55 | 51 | 58 | 55 | 56 | 55 | 58 | 56 | 55 | 51 | 60 | 9 |
| 102 | 99 | 91 | 98 | 97 | 93 | 99 | 91 | 97 | 96 | 98 | 99 | 96 | 89 | 102 | 13 |
| 36 | 35 | 32 | 40 | 34 | 34 | 35 | 32 | 34 | 37 | 35 | 40 | 35 | 32 | 41 | 9 |

| FEMALES | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Aver. | Min. | Max. | Range |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Age..... | 25 | 60 | 30 | 33 | 28 | 25 | 50 | 40 | 36 | .... | .... | .... |
| Height..... | 1560 | 1580 | 1470 | 1580 | 1490 | 1450 | 1520 | 1430 | 1510 | 1470 | 1580 | 110 |
| Span..... | 1580 | 1620 | 1460 | 1580 | 1490 | 1460 | 1550 | 1440 | 1522 | 1440 | 1620 | 180 |
| Head length..... | 182 | 186 | 178 | 185 | 189 | 184 | 185 | 188 | 183 | 178 | 189 | 11 |
| Head breadth..... | 140 | 139 | 141 | 143 | 151 | 148 | 144 | 147 | 143 | 139 | 148 | 9 |
| Span excess of height..... | 20 | 40 | 10 | 0 | 0 | 10 | 30 | 10 | 12 | 0 | 40 | 40 |
| Cephalic index..... | 76.92 | 74.73 | 79.21 | 77.33 | 79.89 | 80.43 | 77.87 | 78.19 | 78.07 | 74.73 | 80.43 | 5.70 |

TABLE 2. ARAWAKAN STOCK. MEASUREMENTS

| MALES | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|-----------------------------------|------|------|------|-------|------|------|------|------|------|
| Age | 25 | 30 | 25 | 40 | 35 | 23 | 50 | 35 | 30 |
| Height | 1670 | 1630 | 1620 | 1560 | 1590 | 1610 | 1570 | 1650 | 1620 |
| Height to shoulder | 1390 | 1350 | 1370 | 1300 | 1330 | 1360 | 1290 | 1370 | 1360 |
| Height to middle finger | 640 | 630 | 660 | 630 | 580 | 640 | 620 | 650 | 650 |
| Height sitting | 850 | 830 | 850 | 850 | 800 | 840 | 850 | 860 | 840 |
| Height s. perct. tot. ht. | 50.9 | 50.9 | 52.5 | 54.5 | 50 | 52.1 | 54.1 | 52.1 | 51.8 |
| Span | 1700 | 1650 | 1690 | 1650 | 1640 | 1650 | 1640 | 1690 | 1680 |
| Span excess of height | 30 | 20 | 70 | 90 | 50 | 40 | 70 | 40 | 60 |
| Shoulder breadth | 430 | 450 | 400 | 400 | 360 | 380 | 400 | 440 | 420 |
| Chest diam. lateral | 313 | 281 | 290 | 285 | 310 | 270 | 290 | 304 | 315 |
| Chest diam. ant.-post. | 230 | 240 | 250 | 235 | 240 | 205 | 235 | 230 | 235 |
| Chest index | 73.1 | 85.4 | 86.2 | 82.4 | 77.4 | 75.9 | 81.0 | 75.6 | 74.6 |
| Cubit length | 460 | 470 | 420 | 420 | 430 | 460 | 450 | 420 | 410 |
| Hand length | 175 | 183 | 170 | 172 | 169 | 184 | 177 | 168 | 170 |
| Hand width | 88 | 85 | 84 | 83 | 84 | 87 | 83 | 84 | 85 |
| Hand index | 50.3 | 46.5 | 49.1 | 48.3 | 49.7 | 47.3 | 46.9 | 50 | 50 |
| Length middle finger | 105 | 114 | 101 | 104 | 102 | 106 | 105 | 101 | 101 |
| Foot length | 251 | 263 | 252 | 250 | 253 | 252 | 250 | 260 | 256 |
| Foot width | 100 | 103 | 96 | 99 | 99 | 97 | 97 | 102 | 97 |
| Foot index | 39.8 | 39.1 | 38.1 | 39.6 | 39.1 | 38.5 | 38.8 | 38.4 | 38 |
| Hand grasp, r. | 32 | 38 | 35 | 38 | 28 | 37 | 36 | 36 | 35 |
| Hand grasp, l. | 34 | 47 | 44 | 48 | 30 | 40 | 39 | 41 | 38 |
| Head length | 180 | 187 | 186 | 193 | 175 | 185 | 190 | 182 | 184 |
| Head breadth | 145 | 147 | 147 | 145 | 143 | 146 | 142 | 144 | 146 |
| Head height | 135 | 136 | 133 | 135 | 136 | 133 | 135 | 132 | 133 |
| Auricular-nasion (a) | 110 | 109 | 98 | 98 | 106 | 102 | 102 | 104 | 100 |
| Auricular-prosthion (b) | 111 | 112 | 108 | 105 | 101 | 109 | 107 | 110 | 103 |
| Cephalic index | 80.6 | 78.6 | 79 | 75 | 81.7 | 78.9 | 74.7 | 79.1 | 79.4 |
| Height-breadth index | 93.1 | 92.5 | 90.5 | 93.1 | 94.4 | 91.1 | 95 | 91.7 | 91.1 |
| (a) $\times 100 \div b$ | 99.1 | 97.3 | 90.7 | 93.3 | 97 | 97.3 | 95.3 | 94.6 | 97.1 |
| Cephalic module | 15.3 | 17.7 | 15.5 | 15.8 | 15.1 | 15.5 | 15.6 | 15.2 | 15.4 |
| C. M. versus height | 91.6 | 96.3 | 95.7 | 101.2 | 95 | 96.3 | 99.4 | 92.1 | 95.1 |
| Menton-nasion | 120 | 121 | 112 | 105 | 98 | 119 | 107 | 110 | 109 |
| Mouth-nasion | 70 | 72 | 69 | 70 | 64 | 69 | 67 | 68 | 65 |
| Menton-crinion | 187 | 189 | 175 | 162 | 153 | 186 | 169 | 177 | 152 |
| Bizygomatic breadth | 140 | 141 | 153 | 144 | 146 | 141 | 143 | 143 | 148 |
| Facial index | 85.7 | 85.8 | 73.2 | 72.9 | 76.1 | 84.4 | 74.8 | 76.9 | 73.6 |
| Min. frontal breadth | 117 | 124 | 124 | 118 | 117 | 123 | 118 | 120 | 122 |
| Bigonial breadth | 120 | 120 | 117 | 117 | 120 | 119 | 118 | 123 | 120 |
| Nose height | 50 | 52 | 52 | 50 | 49 | 51 | 50 | 50 | 49 |
| Nose breadth | 45 | 45 | 39 | 38 | 34 | 45 | 42 | 40 | 43 |
| Nasal index | 90 | 86.5 | 75 | 76 | 68.4 | 88.2 | 84 | 80 | 87.7 |
| Ear height | 69 | 64 | 67 | 65 | 59 | 63 | 68 | 64 | 67 |
| Ear breadth | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Mouth width | 63 | 64 | 59 | 52 | 49 | 64 | 60 | 58 | 61 |
| Eyes max. width | 104 | 106 | 90 | 94 | 97 | 103 | 106 | 102 | 104 |
| Eyes min. width | 46 | 46 | 40 | 35 | 35 | 46 | 45 | 44 | 44 |

OF MACHEYENGA INDIANS (19 MALES)

| 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | Aver. | Min. | Max. | Range |
|------|------|------|------|------|------|------|-------|------|------|-------|-------|-------|-------|
| 40 | 35 | 25 | 30 | 30 | 45 | 35 | 25 | 22 | 23 | ... | ... | ... | ... |
| 1590 | 1580 | 1640 | 1660 | 1580 | 1630 | 1660 | 1560 | 1660 | 1660 | 1610 | 1560 | 1670 | 110 |
| 1340 | 1320 | 1370 | 1350 | 1310 | 1360 | 1380 | 1310 | 1340 | 1350 | 1350 | 1290 | 1390 | 100 |
| 590 | 620 | 670 | 640 | 620 | 640 | 660 | 630 | 620 | 630 | 632 | 580 | 670 | 90 |
| 810 | 800 | 840 | 820 | 810 | 830 | 850 | 840 | 820 | 810 | 832 | 800 | 860 | 60 |
| 50.9 | 50 | 51.2 | 51.3 | 51.3 | 50.9 | 51.2 | 53.8 | 51.3 | 50.6 | 51.1 | 50 | 54.5 | 4.5 |
| 1660 | 1630 | 1690 | 1650 | 1630 | 1670 | 1700 | 1640 | 1670 | 1640 | 1660 | 1630 | 1700 | 70 |
| 70 | 50 | 50 | 50 | 50 | 40 | 40 | 80 | 70 | 40 | 53 | 20 | 90 | 70 |
| 360 | 380 | 410 | 400 | 430 | 450 | 440 | 380 | 370 | 420 | 406 | 360 | 450 | 90 |
| 285 | 270 | 300 | 285 | 290 | 315 | 284 | 270 | 280 | 300 | 293 | 270 | 315 | 45 |
| 240 | 235 | 230 | 220 | 245 | 240 | 250 | 215 | 225 | 245 | 234 | 205 | 250 | 45 |
| 84.2 | 88.9 | 76.7 | 77.2 | 84.4 | 76.2 | 80.6 | 79.6 | 80.3 | 81.6 | 80.2 | 73.1 | 88.9 | 15.8 |
| 420 | 460 | 470 | 450 | 440 | 440 | 420 | 410 | 430 | 460 | 439 | 410 | 470 | 60 |
| 176 | 184 | 177 | 175 | 180 | 168 | 170 | 171 | 180 | 174 | 175 | 168 | 184 | 16 |
| 85 | 87 | 83 | 88 | 86 | 90 | 84 | 85 | 83 | 80 | 85 | 80 | 90 | 10 |
| 48.3 | 47.3 | 46.9 | 50.3 | 47.8 | 53.6 | 49.4 | 49.7 | 46.1 | 46.0 | 48.1 | 46 | 53.6 | 7.6 |
| 103 | 110 | 107 | 106 | 108 | 105 | 102 | 102 | 104 | 103 | 105 | 101 | 114 | 13 |
| 253 | 252 | 257 | 252 | 251 | 258 | 255 | 251 | 259 | 256 | 254 | 251 | 263 | 12 |
| 96 | 96 | 99 | 97 | 97 | 101 | 98 | 99 | 102 | 100 | 99 | 96 | 103 | 7 |
| 38 | 38.1 | 38.5 | 38.5 | 39 | 39.1 | 38.4 | 39.4 | 39.3 | 39 | 38.7 | 38 | 39.8 | 1.8 |
| 38 | 37 | 31 | 29 | 33 | 36 | 34 | 35 | 37 | 30 | 35 | 28 | 38 | 10 |
| 46 | 44 | 36 | 31 | 33 | 39 | 41 | 45 | 42 | 36 | 40 | 30 | 48 | 18 |
| 176 | 189 | 186 | 188 | 191 | 180 | 179 | 190 | 187 | 185 | 184 | 175 | 193 | 18 |
| 144 | 147 | 146 | 148 | 146 | 145 | 144 | 148 | 147 | 145 | 145 | 142 | 148 | 6 |
| 135 | 136 | 134 | 136 | 134 | 135 | 134 | 133 | 136 | 132 | 134 | 132 | 136 | 4 |
| 99 | 102 | 102 | 98 | 101 | 107 | 103 | 109 | 99 | 105 | 102 | 98 | 110 | 12 |
| 103 | 108 | 106 | 104 | 107 | 110 | 105 | 111 | 102 | 109 | 107 | 101 | 112 | 11 |
| 81.8 | 77.8 | 78.5 | 78.7 | 76.4 | 80.6 | 80.5 | 77.9 | 78.6 | 78.4 | 78.99 | 74.70 | 81.80 | 7.10 |
| 93.8 | 92.5 | 91.8 | 91.9 | 91.8 | 93.1 | 93.1 | 89.9 | 92.5 | 91 | 92.5 | 89.9 | 95 | 5.1 |
| 96.1 | 94.4 | 96.2 | 94.2 | 94.4 | 97.3 | 98.1 | 98.2 | 97.1 | 96.3 | 96 | 90.7 | 99.1 | 8.4 |
| 15.2 | 15.7 | 15.5 | 15.7 | 15.4 | 15.0 | 15.2 | 15.7 | 15.7 | 15.4 | 15.6 | 15 | 15.8 | .8 |
| 95.6 | 99.4 | 94.5 | 98.1 | 97.5 | 92.0 | 91.6 | 101.0 | 98.1 | 96.3 | 96.2 | 91.6 | 101.2 | 9.6 |
| 120 | 114 | 116 | 118 | 112 | 105 | 113 | 114 | 107 | 106 | 112 | 98 | 121 | 23 |
| 71 | 68 | 67 | 66 | 69 | 65 | 68 | 69 | 65 | 67 | 67 | 65 | 72 | 7 |
| 186 | 177 | 180 | 179 | 176 | 163 | 175 | 178 | 164 | 168 | 173 | 152 | 189 | 37 |
| 146 | 141 | 150 | 151 | 145 | 144 | 146 | 149 | 145 | 144 | 145 | 140 | 153 | 13 |
| 82.2 | 80.9 | 77.3 | 78.1 | 77.2 | 72.9 | 77.4 | 76.5 | 73.8 | 73.6 | 77.5 | 72.9 | 85.8 | 12.9 |
| 119 | 124 | 123 | 122 | 120 | 118 | 118 | 123 | 122 | 118 | 121 | 117 | 124 | 7 |
| 118 | 117 | 119 | 119 | 118 | 116 | 121 | 119 | 118 | 117 | 119 | 116 | 123 | 7 |
| 52 | 50 | 49 | 50 | 52 | 50 | 51 | 52 | 49 | 50 | 50 | 49 | 52 | 3 |
| 39 | 38 | 42 | 40 | 39 | 39 | 41 | 44 | 37 | 38 | 40 | 34 | 45 | 11 |
| 75 | 76 | 85.7 | 80 | 75 | 78 | 80.4 | 84.6 | 75.5 | 76 | 80.1 | 68.4 | 90.0 | 21.6 |
| 68 | 62 | 66 | 64 | 61 | 60 | 68 | 69 | 67 | 68 | 65 | 59 | 69 | 10 |
| .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| 59 | 51 | 60 | 51 | 57 | 61 | 53 | 62 | 51 | 53 | 57 | 51 | 64 | 13 |
| 101 | 95 | 102 | 104 | 98 | 95 | 99 | 102 | 97 | 96 | 99 | 90 | 104 | 14 |
| 42 | 35 | 41 | 43 | 40 | 37 | 36 | 43 | 35 | 36 | 41 | 35 | 46 | 11 |

TABLE 3. PANOAN STOCK. MEASUREMENTS

| MALES | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|-----------------------------------|-------|-------|-------|-------|-------|-------|-------|
| Age 25 to 50 . . . . . | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Height | 1590 | 1590 | 1580 | 1585 | 1500 | 1570 | 1590 |
| Height to shoulder | 1260 | 1270 | 1320 | 1290 | 1220 | 1280 | 1260 |
| Height to middle finger | 615 | 590 | 615 | 570 | 565 | 580 | 600 |
| Height sitting | 782 | 760 | 833 | 810 | 801 | 815 | 775 |
| Height s. perct. tot. ht. | 49.8 | 48 | 52.6 | 51.1 | 53.4 | 51.9 | 48.7 |
| Span | 1715 | 1670 | 1690 | 1675 | 1605 | 1660 | 1690 |
| Span excess of height | 125 | 80 | 110 | 90 | 105 | 90 | 100 |
| Shoulder breadth | 375 | 390 | 405 | 365 | 350 | 370 | 385 |
| Chest diam. lateral | 305 | 320 | 300 | 270 | 275 | 270 | 315 |
| Chest diam. ant.-post. | 225 | 250 | 235 | 225 | 220 | 230 | 245 |
| Chest index | 73.7 | 78.1 | 74.3 | 83.3 | 80 | 85.2 | 77.7 |
| Cubit length | 455 | 450 | 450 | 455 | 430 | 445 | 453 |
| Hand length | 172 | 170 | 168 | 180 | 173 | 179 | 171 |
| Hand width | 82 | 81 | 80 | 80 | 88 | 82 | 81 |
| Hand index | 47.6 | 47.9 | 47.6 | 44.7 | 50.8 | 45.8 | 47.4 |
| Length middle finger | 110 | 109 | 108 | 115 | 113 | 110 | 110 |
| Foot length | 235 | 245 | 250 | 253 | 250 | 254 | 250 |
| Foot width | 102 | 103 | 105 | 101 | 111 | 106 | 102 |
| Foot index | 43.4 | 42 | 42 | 39.9 | 44.4 | 41.7 | 40.8 |
| Hand grasp, r. | 37 | 35 | 43 | 32 | 35 | 40 | 35 |
| Hand grasp, l. | 40 | 30 | 37 | 32 | 32 | 36 | 39 |
| Head length | 179 | 190 | 174 | 176 | 182 | 173 | 189 |
| Head breadth | 163 | 157 | 149 | 159 | 145 | 147 | 156 |
| Head height | 131 | 136 | 132 | 139 | 142 | 130 | 137 |
| Auricular-nasion (a) | 97 | 101 | 91 | 91 | 92 | 91 | 101 |
| Auricular-prosthion (b) | 104 | 108 | 99 | 95 | 99 | 95 | 109 |
| Cephalic index | 91.06 | 82.63 | 84.48 | 90.34 | 79.67 | 84.22 | 82.54 |
| Height-breadth index | 80.37 | 86.08 | 88.59 | 87.43 | 97.90 | 88.44 | 87.82 |
| (a) $\times 100 \div b$ | 93.27 | 93.52 | 91.92 | 95.55 | 92.93 | 95.55 | 92.66 |
| Cephalic module | 15.77 | 16.10 | 15.16 | 15.80 | 15.63 | 15 | 16.06 |
| C. M. versus height | 99 | 101.3 | 95.8 | 97.7 | 104 | 98.7 | 101 |
| Menton-nasion | 125 | 117 | 125 | 125 | 117 | 126 | 118 |
| Mouth-nasion | 72 | 73 | 74 | 73 | 69 | 72 | 75 |
| Menton-crinion | 193 | 190 | 193 | 191 | 186 | 192 | 191 |
| Bizygomatic breadth | 151 | 155 | 146 | 141 | 142 | 143 | 144 |
| Facial index | 82.78 | 75.48 | 85.62 | 88.65 | 82.39 | 88.11 | 81.94 |
| Min. frontal breadth | 127 | 127 | 124 | 125 | 119 | 126 | 125 |
| Bigonial breadth | 134 | 134 | 118 | 118 | 127 | 119 | 133 |
| Nose height | 46 | 46 | 48 | 51 | 47 | 50 | 49 |
| Nose breadth | 39 | 46 | 38 | 38 | 40 | 39 | 46 |
| Nasal index | 84.78 | 100 | 79.17 | 74.51 | 85.11 | 78 | 93.87 |
| Ear height | 65 | 69 | 68 | 67 | 59 | 68 | 69 |
| Ear breadth | 34 | 32 | 30 | 36 | 29 | 35 | 35 |
| Mouth width | 53 | 67 | 54 | 49 | 50 | 49 | 60 |
| Eyes max. width | 109 | 112 | 98 | 102 | 100 | 103 | 110 |
| Eyes min. width | 41 | 41 | 37 | 37 | 37 | 38 | 40 |

OF SIPIBO INDIANS (14 MALES)

| 8 | 9 | 10 | 11 | 12 | 13 | 14 | Aver. | Min. | Max. | Range |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | | | | | | | | | |
| 1530 | 1550 | 1570 | 1580 | 1580 | 1540 | 1590 | 1568 | 1500 | 1590 | 90 |
| 1250 | 1260 | 1330 | 1300 | 1250 | 1260 | 1270 | 1273 | 1220 | 1330 | 110 |
| 580 | 595 | 620 | 580 | 598 | 605 | 610 | 594 | 565 | 620 | 55 |
| 815 | 770 | 825 | 800 | 795 | 820 | 775 | 797 | 760 | 833 | 73 |
| 53.2 | 49.6 | 52.5 | 50.6 | 50.3 | 53.2 | 48.7 | 50.97 | 48 | 53.4 | 5.4 |
| 1635 | 1645 | 1680 | 1675 | 1690 | 1630 | 1670 | 1666 | 1605 | 1715 | 110 |
| 105 | 95 | 110 | 95 | 110 | 90 | 80 | 99 | 80 | 125 | 45 |
| 405 | 385 | 400 | 371 | 390 | 365 | 380 | 381 | 350 | 405 | 55 |
| 320 | 295 | 315 | 303 | 315 | 275 | 312 | 292 | 270 | 320 | 50 |
| 240 | 235 | 240 | 232 | 250 | 230 | 245 | 235 | 220 | 250 | 30 |
| 75 | 79.6 | 76.2 | 76.2 | 79.3 | 84 | 77.7 | 78.58 | 73.7 | 85.2 | 11.5 |
| 435 | 440 | 452 | 450 | 455 | 435 | 452 | 447 | 430 | 455 | 25 |
| 174 | 172 | 169 | 178 | 171 | 172 | 171 | 173 | 168 | 180 | 12 |
| 86 | 82 | 81 | 80 | 82 | 88 | 82 | 82.5 | 80 | 88 | 8 |
| 49.4 | 47.7 | 47.9 | 44.9 | 47.9 | 50.8 | 47.9 | 47.73 | 44.7 | 50.8 | 6.1 |
| 113 | 109 | 108 | 116 | 109 | 113 | 108 | 111 | 108 | 116 | 8 |
| 245 | 238 | 238 | 247 | 246 | 245 | 240 | 245 | 235 | 254 | 19 |
| 101 | 103 | 104 | 102 | 103 | 110 | 101 | 104 | 101 | 111 | 10 |
| 41.2 | 43.2 | 43.6 | 41.3 | 42 | 44.9 | 42.1 | 42.32 | 39.9 | 44.9 | 5.0 |
| 38 | 40 | 33 | 36 | 35 | 38 | 32 | 36.4 | 32 | 43 | 11 |
| 38 | 31 | 39 | 30 | 32 | 30 | 33 | 34.2 | 30 | 40 | 10 |
| 185 | 182 | 178 | 179 | 190 | 186 | 185 | 182 | 173 | 190 | 17 |
| 148 | 163 | 161 | 160 | 159 | 150 | 160 | 156 | 145 | 163 | 18 |
| 131 | 132 | 142 | 138 | 135 | 130 | 133 | 135 | 130 | 142 | 12 |
| 95 | 96 | 94 | 92 | 101 | 95 | 99 | 95 | 91 | 101 | 10 |
| 102 | 103 | 101 | 97 | 107 | 99 | 106 | 101 | 95 | 109 | 14 |
| 80 | 89.56 | 90.45 | 89.40 | 83.68 | 80.65 | 81.08 | 85.69 | 79.67 | 91.06 | 11.39 |
| 88.51 | 80.98 | 88.25 | 86.25 | 84.91 | 86.67 | 83.13 | 86.82 | 80.37 | 97.90 | 17.53 |
| 93.14 | 93.20 | 93.07 | 94.84 | 94.38 | 95.96 | 93.39 | 93.81 | 91.92 | 95.96 | 4.04 |
| 15.80 | 15.90 | 16.03 | 15.90 | 16.13 | 15.50 | 15.93 | 15.76 | 15.00 | 16.13 | 1.13 |
| 103.2 | 102.5 | 102.1 | 100.6 | 101.9 | 100.6 | 100 | 100.5 | 97.7 | 104 | 6.3 |
| 120 | 121 | 125 | 124 | 119 | 123 | 117 | 121.5 | 117 | 126 | 9 |
| 72 | 70 | 74 | 72 | 74 | 72 | 70 | 72 | 69 | 75 | 6 |
| 189 | 191 | 192 | 190 | 191 | 193 | 186 | 190 | 186 | 193 | 7 |
| 145 | 148 | 146 | 142 | 152 | 154 | 143 | 146.5 | 141 | 155 | 14 |
| 82.76 | 81.76 | 85.62 | 85.21 | 78.29 | 79.87 | 81.82 | 82.88 | 75.48 | 88.65 | 13.17 |
| 122 | 124 | 124 | 126 | 127 | 119 | 127 | 124 | 119 | 127 | 8 |
| 130 | 131 | 118 | 119 | 133 | 128 | 134 | 128 | 118 | 134 | 16 |
| 50 | 48 | 46 | 49 | 46 | 48 | 47 | 48 | 46 | 51 | 5 |
| 38 | 41 | 39 | 43 | 41 | 41 | 38 | 40.5 | 38 | 46 | 8 |
| 76 | 85.42 | 84.78 | 87.76 | 89.13 | 85.42 | 80.85 | 84.63 | 74.51 | 100 | 25.49 |
| 62 | 66 | 68 | 67 | 69 | 59 | 67 | 66 | 59 | 69 | 10 |
| 32 | 34 | 31 | 35 | 33 | 30 | 33 | 33 | 29 | 36 | 7 |
| 49 | 52 | 55 | 49 | 66 | 51 | 60 | 56 | 49 | 67 | 18 |
| 98 | 105 | 99 | 103 | 111 | 101 | 110 | 104 | 98 | 112 | 14 |
| 41 | 39 | 38 | 37 | 41 | 38 | 41 | 39 | 37 | 41 | 4 |

TABLE 4. PANOAN STOCK. MEASUREMENTS OF 3 CONEBO,

| Males | CONEBO | | | | |
|--|--------|-------|-------|---------|-------|
| | 1 | 2 | 3 | Average | Range |
| Age..... | 38 | 30 | 23 | .... | .... |
| Height..... | 1610 | 1620 | 1590 | 1610 | 30 |
| Height to shoulder..... | 1350 | 1370 | 1330 | 1350 | 40 |
| Height to middle finger..... | 620 | 630 | 600 | 612 | 30 |
| Height sitting..... | 841 | 854 | 820 | 838 | 34 |
| Height s. perct. tot. ht. | 52.20 | 52.71 | 51.57 | 52.16 | 1.14 |
| Span..... | 1670 | 1670 | 1660 | 1666 | 10 |
| Span excess of height..... | 60 | 50 | 70 | 60 | 20 |
| Shoulder breadth..... | 370 | 390 | 365 | 375 | 25 |
| Chest diam. lateral..... | 275 | 285 | 264 | 274 | 21 |
| Chest diam. ant.-post. | 240 | 260 | 220 | 240 | 40 |
| Chest index..... | 87.27 | 91.22 | 83.33 | 87.27 | 7.89 |
| Cubit length..... | 450 | 470 | 440 | 451 | 30 |
| Hand length..... | 173 | 176 | 170 | 173 | 6 |
| Hand width..... | 81 | 82 | 81 | 81 | 1 |
| Hand index..... | 46.82 | 46.59 | 47.65 | 47.02 | 1.06 |
| Length mid. finger..... | 109 | 108 | 110 | 109 | 2 |
| Foot length..... | 240 | 230 | 260 | 241 | 30 |
| Foot width..... | 103 | 106 | 101 | 103 | 5 |
| Foot index..... | 42.92 | 46.08 | 38.84 | 42.61 | 7.89 |
| Hand grasp, r. | 40 | 46 | 37 | 40 | 9 |
| Hand grasp, l. | 37 | 41 | 33 | 37 | 8 |
| Head length..... | 177 | 180 | 175 | 177 | 5 |
| Head breadth..... | 162 | 164 | 160 | 162 | 4 |
| Head height..... | 141 | 142 | 141 | 142 | 1 |
| Auricular-nasion (<i>a</i>)..... | 95 | 95 | 94 | 95 | 1 |
| Auricular-prosthion (<i>b</i>)..... | 103 | 104 | 101 | 103 | 3 |
| Cephalic index..... | 91.53 | 91.11 | 91.43 | 91.36 | .42 |
| Height-breadth index..... | 87.04 | 86.59 | 88.13 | 87.25 | 1.54 |
| (<i>a</i>) $\times 100 \div b$ | 92.23 | 91.35 | 93.07 | 92.22 | 1.72 |
| Cephalic module..... | 16 | 16.2 | 15.9 | 16 | .3 |
| C. M. versus height..... | 99.38 | 100 | 100 | 99.13 | .62 |
| Menton-nasion..... | 124 | 124 | 123 | 124 | 1 |
| Mouth-nasion..... | 75 | 77 | 72 | 74 | 5 |
| Menton-crinion..... | 192 | 193 | 198 | 194 | 6 |
| Bizygomatic breadth..... | 142 | 141 | 142 | 141 | 1 |
| Facial index..... | 87.32 | 87.94 | 86.62 | 87.26 | 1.32 |
| Min. frontal breadth..... | 117 | 115 | 118 | 116 | 3 |
| Bigonial breadth..... | 126 | 128 | 125 | 126 | 3 |
| Nose height..... | 52 | 54 | 52 | 53 | 2 |
| Nose breadth..... | 44 | 45 | 44 | 44 | 1 |
| Nasal index..... | 84.62 | 83.33 | 84.62 | 84.19 | 1.29 |
| Ear height..... | ..... | ..... | ..... | ..... | ..... |
| Ear breadth..... | ..... | ..... | ..... | ..... | ..... |
| Mouth width..... | 53 | 56 | 52 | 54 | 4 |
| Eyes max. width..... | 103 | 100 | 105 | 103 | 5 |
| Eyes min. width..... | 35 | 34 | 35 | 35 | 1 |

3 SETIBO, AND 2 AMAHUACA INDIANS (MALES)

| SETIBO | | | | | AMAHUACA | | | |
|--------|-------|-------|---------|-------|----------|-------|---------|-------|
| 1 | 2 | 3 | Average | Range | 1 | 2 | Average | Range |
| 40 | 28 | 30 | .... | .... | 35 | 30 | .... | .... |
| 1580 | 1600 | 1560 | 1580 | 40 | 1580 | 1620 | 1600 | 40 |
| 1280 | 1330 | 1270 | 1290 | 60 | 1300 | 1360 | 1330 | 60 |
| 560 | 610 | 540 | 570 | 70 | 640 | 640 | 640 | .... |
| 815 | 830 | 795 | 813 | 35 | 775 | 800 | 787.5 | 25 |
| 51.58 | 51.87 | 50.90 | 51.45 | .97 | 49.05 | 49.38 | 49.21 | .33 |
| 1650 | 1690 | 1675 | 1670 | 40 | 1670 | 1650 | 1660 | 20 |
| 70 | 90 | 115 | 92 | 45 | 90 | 30 | 60 | 60 |
| 390 | 350 | 365 | 370 | 40 | 380 | 410 | 395 | 30 |
| 270 | 275 | 270 | 272 | 5 | 285 | 310 | 297 | 25 |
| 225 | 220 | 233 | 226 | 13 | 240 | 240 | 240 | .... |
| 83.31 | 80 | 86.29 | 83.20 | 6.29 | 84.21 | 77.42 | 80.81 | 6.79 |
| 455 | 470 | 435 | 453 | 35 | 450 | 455 | 453 | 5 |
| 180 | 178 | 179 | 179 | 2 | 177 | 183 | 180 | 6 |
| 80 | 80 | 82 | 81 | 2 | 80 | 86 | 83 | 6 |
| 44.44 | 44.94 | 45.81 | 45.06 | 1.37 | 45.19 | 46.99 | 46.09 | 1.80 |
| 115 | 114 | 116 | 115 | 2 | 107 | 111 | 109 | 4 |
| 260 | 253 | 245 | 253 | 15 | 240 | 240 | 240 | .... |
| 101 | 101 | 101 | 101 | .... | 97 | 103 | 100 | 6 |
| 38.84 | 39.91 | 41.22 | 39.99 | 2.38 | 40.41 | 42.92 | 41.66 | 2.51 |
| 40 | 28 | 32 | 33 | 12 | 35 | 33 | 34 | 2 |
| 30 | 34 | 32 | 32 | 4 | 30 | 38 | 34 | 8 |
| 180 | 178 | 174 | 177 | 6 | 192 | 191 | 192 | 1 |
| 164 | 161 | 156 | 160 | 8 | 157 | 155 | 156 | 2 |
| 141 | 139 | 130 | 137 | 11 | 136 | 141 | 138 | 5 |
| 95 | 91 | 92 | 93 | 4 | 95 | 99 | 97 | 4 |
| 102 | 95 | 95 | 97 | 7 | 101 | 103 | 102 | 2 |
| 91.11 | 90.45 | 89.66 | 90.41 | 1.45 | 81.77 | 81.15 | 81.46 | .62 |
| 85.98 | 86.43 | 83.87 | 85.43 | 2.56 | 86.62 | 90.97 | 88.79 | 4.35 |
| 93.14 | 95.55 | 96.84 | 95.17 | 3.70 | 94.06 | 96.12 | 95.09 | 2.06 |
| 16 | 15.9 | 15.4 | 15.8 | .6 | 16.2 | 16.2 | 16.2 | .... |
| 101.27 | 99.38 | 98.12 | 99.59 | 3.15 | 102.53 | 100 | 101.26 | 2.53 |
| 125 | 126 | 124 | 125 | 2 | 122 | 120 | 121 | 2 |
| 73 | 72 | 72 | 72 | 1 | 73 | 75 | 74 | 2 |
| 192 | 192 | 191 | 192 | 1 | 185 | 198 | 191 | 13 |
| 141 | 143 | 140 | 141 | 3 | 154 | 147 | 150 | 7 |
| 88.65 | 88.11 | 88.57 | 88.44 | .54 | 79.22 | 81.63 | 80.42 | 2.41 |
| 126 | 125 | 127 | 126 | 2 | 125 | 130 | 127 | 5 |
| 117 | 120 | 118 | 118 | 3 | 123 | 131 | 127 | 8 |
| 47 | 51 | 53 | 50 | 6 | 50 | 52 | 51 | 2 |
| 36 | 38 | 39 | 38 | 3 | 43 | 45 | 44 | 2 |
| 76.60 | 74.51 | 73.58 | 74.89 | 3.02 | 86 | 86.54 | 86.27 | .54 |
| 67 | 68 | 65 | 67 | 3 | 63 | 57 | 60 | 6 |
| 36 | 30 | 34 | 33 | 6 | 30 | 35 | 33 | 5 |
| 48 | 53 | 44 | 38 | 9 | 55 | 59 | 57 | 4 |
| 100 | 102 | 104 | 102 | 4 | 100 | 95 | 97 | 5 |
| 37 | 37 | 38 | 37 | 1 | 33 | 35 | 34 | 2 |

TABLE 5. TUPIAN STOCK. MEASUREMENTS OF TIATINAGUA INDIANS (4 MALES)

| MALES | 1 | 2 | 3 | 4 | Aver. | Min. | Max. | Range |
|-------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Age..... | 30 | 25 | 23 | 22 | .... | .... | .... | .... |
| Height..... | 1590 | 1600 | 1570 | 1580 | 1585 | 1570 | 1600 | 30 |
| Height to shoulder..... | 1320 | 1350 | 1290 | 1330 | 1323 | 1290 | 1350 | 60 |
| Height to mid. finger..... | 630 | 610 | 630 | 620 | 622 | 610 | 630 | 20 |
| Height sitting..... | 80 | 79.5 | 79 | 79.5 | 79.5 | 79 | 80 | 1 |
| Height s. perct. tot. ht..... | 50.31 | 49.06 | 50.32 | 50.31 | 50 | 49.06 | 50.32 | 1.26 |
| Span..... | 1620 | 1630 | 1590 | 1650 | 1622 | 1590 | 1650 | 60 |
| Span excess of height..... | 30 | 30 | 20 | 70 | 38 | 20 | 70 | 50 |
| Shoulder breadth..... | 360 | 355 | 350 | 370 | 359 | 350 | 370 | 20 |
| Chest diam. lateral..... | 280 | 260 | 265 | 265 | 268 | 260 | 280 | 20 |
| Chest diam. ant.-post..... | 220 | 225 | 230 | 245 | 230 | 220 | 245 | 25 |
| Chest index..... | 78.57 | 86.54 | 86.82 | 92.45 | 86.09 | 86.54 | 92.45 | 5.91 |
| Cubit length..... | 450 | 450 | 430 | 460 | 450 | 430 | 460 | 30 |
| Hand length..... | 177 | 171 | 166 | 174 | 172 | 166 | 177 | 11 |
| Hand width..... | 78 | 77 | 77 | 75 | 77 | 75 | 78 | 3 |
| Hand index..... | 44.7 | 44.0 | 46.4 | 43.1 | 43.8 | 43.1 | 46.4 | 3.3 |
| Length mid. finger..... | 109 | 108 | 102 | 110 | 107 | 102 | 110 | 8 |
| Foot length..... | 245 | 240 | 235 | 245 | 241 | 235 | 245 | 10 |
| Foot width..... | 108 | 99 | 99 | 105 | 103 | 99 | 108 | 9 |
| Foot index..... | 44.1 | 41.3 | 42.1 | 42.8 | 42.6 | 41.3 | 44.1 | 2.8 |
| Hand grasp, r..... | 37 | 30 | 28 | 32 | 32 | 28 | 37 | 9 |
| Hand grasp, l..... | 37 | 35 | 25 | 32 | 32 | 25 | 37 | 12 |
| Head length..... | 197 | 196 | 184 | 185 | 191 | 184 | 197 | 13 |
| Head breadth..... | 145 | 147 | 143 | 146 | 145 | 143 | 147 | 4 |
| Head height..... | 141 | 136 | 139 | 134 | 137 | 134 | 141 | 7 |
| Auricular-nasion (a)..... | 97 | 96 | 93 | 92 | 95 | 92 | 97 | 5 |
| Auricular-prosthion (b)..... | 100 | 99 | 101 | 98 | 99 | 98 | 101 | 3 |
| Cephalic index..... | 73.60 | 75 | 77.72 | 78.92 | 76.31 | 73.60 | 78.92 | 5.32 |
| Height-breadth index..... | 97.24 | 92.52 | 97.20 | 91.10 | 94.49 | 91.10 | 97.24 | 6.14 |
| (a) $\times 100 \div b$ | 97 | 96.97 | 92.08 | 93.08 | 94.98 | 92.08 | 97 | 4.92 |
| Cephalic module..... | 16.1 | 16.0 | 15.5 | 15.2 | 15.7 | 15.2 | 16.1 | .9 |
| C. M. versus height..... | 101.3 | 100 | 98.7 | 96.2 | 99.1 | 96.2 | 101.3 | 5.1 |
| Menton-nasion..... | 121 | 114 | 115 | 115 | 118 | 114 | 121 | 7 |
| Mouth-nasion..... | 67 | 67 | 68 | 65 | 67 | 65 | 68 | 3 |
| Menton-crinion..... | 186 | 187 | 171 | 180 | 181 | 171 | 187 | 16 |
| Bizygomatic breadth..... | 147 | 147 | 142 | 139 | 144 | 139 | 147 | 8 |
| Facial index..... | 82.31 | 77.55 | 80.99 | 82.73 | 80.90 | 77.55 | 82.73 | 5.18 |
| Min. frontal breadth..... | 117 | 114 | 111 | 114 | 114 | 111 | 117 | 6 |
| Bigonial breadth..... | 118 | 118 | 119 | 123 | 119 | 118 | 123 | 5 |
| Nose height..... | 44 | 45 | 45 | 42 | 44 | 42 | 45 | 3 |
| Nose breadth..... | 39 | 42 | 39 | 42 | 40 | 39 | 42 | 3 |
| Nasal index..... | 88.64 | 93.33 | 86.67 | 100 | 92.16 | 86.67 | 100 | 13.33 |
| Ear height..... | 60 | 57 | 65 | 59 | 60 | 59 | 65 | 6 |
| Ear breadth..... | 33 | 37 | 36 | 34 | 35 | 33 | 37 | 4 |
| Mouth width..... | 58 | 63 | 51 | 52 | 56 | 51 | 63 | 12 |
| Eyes max. width..... | 98 | 102 | 96 | 96 | 98 | 96 | 102 | 6 |
| Eyes min. width..... | 37 | 37 | 34 | 36 | 36 | 34 | 37 | 3 |

WITOTAN STOCK. MEASUREMENTS OF WITOTO
INDIANS (5 MALES, 4 FEMALES)

| MALES 1 | 2 | 3 | 4 | 5 | Aver. | Min. | Max. | Range |
|---------|--------|-------|-------|-------|--------|-------|--------|-------|
| 30 | 20 | 30 | 28 | 35 | .... | .... | .... | .... |
| 1690 | 1550 | 1650 | 1620 | 1600 | 1620 | 1550 | 1690 | 140 |
| 1380 | 1300 | 1370 | 1340 | 1330 | 1340 | 1300 | 1380 | 80 |
| 660 | 550 | 580 | 610 | 570 | 594 | 550 | 660 | 110 |
| 870 | 760 | 860 | 820 | 810 | 824 | 760 | 870 | 110 |
| 51.48 | 49.03 | 52.12 | 50.62 | 50.63 | 50.78 | 49.03 | 52.12 | 3.09 |
| 1800 | 1660 | 1780 | 1730 | 1720 | 1738 | 1660 | 1800 | 140 |
| 110 | 110 | 130 | 110 | 120 | 116 | 110 | 130 | 20 |
| 400 | 335 | 410 | 375 | 380 | 380 | 335 | 400 | 65 |
| 310 | 275 | 285 | 290 | 300 | 292 | 275 | 310 | 35 |
| 220 | 225 | 215 | 230 | 225 | 223 | 215 | 230 | 15 |
| 70.97 | 81.81 | 75.44 | 79.31 | 75 | 76.51 | 70.97 | 81.81 | 10.84 |
| 460 | 455 | 480 | 470 | 455 | 464 | 455 | 480 | 25 |
| 185 | 180 | 180 | 183 | 180 | 181 | 180 | 185 | 5 |
| 83 | 77 | 85 | 80 | 81 | 81 | 77 | 85 | 8 |
| 44.86 | 42.78 | 47.22 | 43.71 | 45 | 44.71 | 42.78 | 45.00 | 2.22 |
| 109 | 108 | 106 | 107 | 107 | 107 | 106 | 109 | 3 |
| 255 | 240 | 260 | 250 | 255 | 252 | 240 | 260 | 20 |
| 100 | 109 | 99 | 105 | 104 | 103 | 99 | 105 | 6 |
| 39.20 | 45.42 | 38.08 | 42 | 46.22 | 42.18 | 38.08 | 46.22 | 8.14 |
| 45 | 35 | 40 | 40 | 41 | 40 | 35 | 45 | 10 |
| 33 | 32 | 40 | 33 | 35 | 35 | 32 | 40 | 8 |
| 191 | 190 | 196 | 191 | 193 | 192 | 190 | 196 | 6 |
| 149 | 150 | 147 | 150 | 148 | 149 | 147 | 150 | 3 |
| 133 | 131 | 127 | 132 | 129 | 130 | 127 | 133 | 6 |
| 98 | 92 | 95 | 95 | 94 | 95 | 92 | 98 | 6 |
| 96 | 89 | 88 | 92 | 88 | 91 | 88 | 96 | 8 |
| 78.01 | 78.95 | 75 | 78.53 | 76.68 | 77.43 | 75 | 78.95 | 3.95 |
| 82.26 | 87.33 | 86.39 | 88 | 87.16 | 86.23 | 82.26 | 88.00 | 5.74 |
| 97.96 | 96.74 | 92.63 | 96.84 | 93.62 | 104.40 | 92.63 | 104.40 | 11.77 |
| 15.8 | 15.7 | 15.7 | 15.8 | 15.7 | 15.7 | 15.7 | 15.8 | .1 |
| 93.49 | 101.29 | 95.15 | 97.53 | 98.13 | 97.12 | 93.49 | 101.29 | 7.80 |
| 116 | 113 | 105 | 115 | 109 | 112 | 105 | 116 | 11 |
| 70 | 69 | 65 | 70 | 67 | 68 | 65 | 70 | 5 |
| 183 | 185 | 180 | 184 | 183 | 183 | 180 | 185 | 5 |
| 149 | 144 | 144 | 147 | 144 | 146 | 144 | 149 | 5 |
| 77.85 | 78.47 | 72.92 | 78.23 | 75.69 | 76.13 | 72.92 | 78.47 | 5.55 |
| 123 | 122 | 111 | 123 | 116 | 119 | 111 | 123 | 12 |
| 128 | 130 | 129 | 129 | 129 | 129 | 128 | 130 | 2 |
| 46 | 43 | 45 | 45 | 44 | 45 | 43 | 46 | 3 |
| 44 | 39 | 40 | 41 | 39 | 41 | 39 | 44 | 5 |
| 95.65 | 90.70 | 88.89 | 91.11 | 88.64 | 91 | 88.64 | 95.65 | 7.01 |
| 59 | 59 | 62 | 59 | 60 | 60 | 59 | 62 | 3 |
| 28 | 30 | 30 | 29 | 31 | 30 | 28 | 31 | 3 |
| 54 | 52 | 52 | 52 | 55 | 53 | 52 | 55 | 3 |
| 40 | 34 | 37 | 38 | 35 | 37 | 34 | 40 | 6 |

| FEMALES | 1 | 2 | 3 | 4 | Aver. |
|-------------|------|------|------|------|-------|
| Height..... | 1430 | 1480 | 1505 | 1455 | 1468 |

TABLE 6. COMPARISON OF AVERAGE MEASUREMENTS

| | No. | Height | Height to shoulder | Height to middle finger | Height sitting | Height s. perct. tot. ht. | Arm length |
|------------------------|-----|--------|--------------------------|----------------------------------|-------------------|---------------------------------|---------------|
| Macheyenga, A. | 19 | 1610 | 1350 | 632 | 832 | 51.10 | 718 |
| Piro, A. | 23 | 1613 | 1344 | 620 | 866 | 53.77 | 724 |
| Sipibo, P. | 14 | 1586 | 1273 | 594 | 797 | 50.97 | 679 |
| Conebo, P. | 3 | 1610 | 1350 | 612 | 838 | 52.16 | 738 |
| Setibo, P. | 3 | 1580 | 1290 | 570 | 813 | 51.45 | 720 |
| Amahuaca, P. | 2 | 1600 | 1330 | 640 | 788 | 49.21 | 690 |
| Tiatinagua | 4 | 1585 | 1322 | 622 | 795 | 50.00 | 700 |
| Witoto | 5 | 1620 | 1340 | 594 | 824 | 50.78 | 746 |
| Arawakan | 42 | 1612 | 1347 | 626 | 849 | 52.44 | 721 |
| Panoan | 22 | 1593 | 1311 | 604 | 809 | 50.97 | 707 |
| Difference | | 19 | 36 | 22 | 40 | 1.47 | 14 |

| | No. | Hand index | Middle finger length | Foot length | Foot width | Foot index | Hand grasp, r. |
|------------------------|-----|---------------|----------------------------|----------------|---------------|---------------|-------------------|
| Macheyenga, A. | 19 | 48.10 | 105 | 254 | 99 | 38.70 | 34.5 |
| Piro, A. | 23 | 47.64 | 109 | 248 | 104 | 42.77 | 33.5 |
| Sipibo, P. | 14 | 47.73 | 111 | 245 | 104 | 42.32 | 36.4 |
| Conebo, P. | 3 | 47.02 | 109 | 241 | 103 | 42.61 | 40.4 |
| Setibo, P. | 3 | 45.06 | 115 | 253 | 101 | 39.99 | 33.3 |
| Amahuaca, P. | 2 | 46.09 | 109 | 240 | 100 | 41.66 | 34.0 |
| Tiatinagua | 4 | 44.80 | 107 | 241 | 103 | 42.60 | 31.7 |
| Witoto | 5 | 44.71 | 107 | 252 | 103 | 42.18 | 40.0 |
| Arawakan | 42 | 47.87 | 107 | 251 | 102 | 40.74 | 34.0 |
| Panoan | 22 | 46.78 | 111 | 245 | 102 | 41.65 | 36.0 |
| Difference | | 1.09 | -4 | 6 | | -.91 | -2.0 |

| | No. | C. M. versus height | Menton- nasion | Mouth- nasion | Menton- crinion | Diam. bizyg. | Facial index |
|------------------------|-----|---------------------------|-------------------|------------------|--------------------|-----------------|-----------------|
| Macheyenga, A. | 19 | 96.20 | 112 | 67 | 173 | 145 | 77.50 |
| Piro, A. | 23 | 99.17 | 118 | 72 | 194 | 145 | 81.45 |
| Sipibo, P. | 14 | 100.50 | 122 | 72 | 190 | 147 | 82.88 |
| Conebo, P. | 3 | 99.13 | 124 | 74 | 194 | 141 | 87.26 |
| Setibo, P. | 3 | 99.59 | 125 | 72 | 192 | 141 | 88.44 |
| Amahuaca, P. | 2 | 101.26 | 121 | 74 | 191 | 150 | 80.42 |
| Tiatinagua | 4 | 99.10 | 118 | 67 | 181 | 144 | 80.90 |
| Witoto | 5 | 97.12 | 112 | 68 | 183 | 146 | 76.63 |
| Arawakan | 42 | 97.69 | 115 | 70 | 184 | 145 | 79.48 |
| Panoan | 22 | 100.24 | 123 | 73 | 192 | 145 | 84.75 |
| Difference | | -2.55 | -8 | -3 | -8 | | -5.27 |

(MALES) SHOWN IN TABLES 1 TO 5

| Span | Excess span over height | Span percent height | Shoulder breadth | Chest diameter lateral | Chest diameter ant.-post. | Chest index | Cubit length | Hand length | Hand width |
|------|-------------------------|---------------------|------------------|------------------------|---------------------------|-------------|--------------|-------------|------------|
| 1661 | 51 | 103.2 | 406 | 293 | 234 | 80.20 | 439 | 175 | 85 |
| 1673 | 60 | 103.7 | 379 | 283 | 237 | 83.87 | 450 | 177 | 84 |
| 1666 | 80 | 105.0 | 381 | 292 | 235 | 78.58 | 447 | 173 | 83 |
| 1666 | 56 | 103.4 | 375 | 274 | 240 | 87.27 | 451 | 173 | 81 |
| 1670 | 90 | 105.6 | 370 | 272 | 226 | 83.20 | 453 | 179 | 81 |
| 1660 | 60 | 103.7 | 395 | 297 | 240 | 80.81 | 453 | 180 | 83 |
| 1622 | 38 | 102.3 | 359 | 268 | 230 | 86.09 | 450 | 172 | 77 |
| 1738 | 116 | 107.3 | 380 | 292 | 223 | 76.51 | 464 | 181 | 81 |
| 1667 | 57 | 103.4 | 392 | 288 | 236 | 82.04 | 445 | 176 | 85 |
| 1666 | 78 | 104.5 | 385 | 284 | 235 | 82.46 | 451 | 176 | 82 |
| 1 | -21 | -1.1 | 7 | 4 | 1 | -42 | -6 | | 3 |

| Hand grasp, l. | Head length | Head breadth | Head height | Auric.-nasion (a) | Auric.-prosthion (b) | Cephalic index | Height-breadth index | $\frac{a \times 100}{b}$ | Cephalic module |
|----------------|-------------|--------------|-------------|-------------------|----------------------|----------------|----------------------|--------------------------|-----------------|
| 39.7 | 184 | 146 | 134 | 102 | 107 | 78.99 | 92.50 | 96.00 | 156 |
| 33.1 | 194 | 150 | 134 | 95 | 102 | 77.43 | 89.71 | 93.26 | 159 |
| 34.2 | 182 | 156 | 135 | 95 | 101 | 85.69 | 86.82 | 94.07 | 158 |
| 37.0 | 177 | 162 | 142 | 95 | 103 | 91.36 | 87.25 | 92.22 | 160 |
| 32.0 | 177 | 160 | 137 | 93 | 97 | 90.41 | 85.43 | 95.17 | 158 |
| 34.0 | 192 | 156 | 138 | 97 | 102 | 81.46 | 88.79 | 95.09 | 162 |
| 32.2 | 191 | 145 | 138 | 95 | 100 | 76.31 | 94.49 | 95.00 | 157 |
| 35.0 | 192 | 145 | 130 | 95 | 91 | 77.43 | 86.23 | 104.4 | 157 |
| 36.4 | 189 | 148 | 134 | 99 | 105 | 78.30 | 91.10 | 94.63 | 158 |
| 34.3 | 182 | 159 | 138 | 95 | 101 | 87.33 | 87.07 | 94.07 | 160 |
| 2.1 | 7 | -11 | -4 | 4 | 4 | -9.03 | 4.03 | .56 | -2 |

| Diam. min. frontal | Diam. bigon. | Nose height | Nose width | Nasal index | Ear height r. | Ear width r. | Mouth width | Eyes max. width | Eyes min. width |
|--------------------|--------------|-------------|------------|-------------|---------------|--------------|-------------|-----------------|-----------------|
| 121 | 119 | 50 | 40 | 80.10 | 65 | .. | 57 | 99 | 41 |
| 121 | 125 | 48 | 41 | 86.59 | 66 | 34 | 55 | 96 | 35 |
| 124 | 128 | 48 | 41 | 84.63 | 66 | 33 | 56 | 104 | 39 |
| 116 | 126 | 53 | 44 | 84.19 | .. | .. | 54 | 103 | 35 |
| 126 | 118 | 50 | 38 | 74.89 | 67 | 33 | 48 | 102 | 37 |
| 127 | 127 | 51 | 44 | 86.27 | 60 | 33 | 57 | 97 | 34 |
| 114 | 119 | 44 | 41 | 92.16 | 60 | 35 | 56 | 98 | 36 |
| 119 | 129 | 45 | 41 | 91.00 | 60 | 30 | 53 | 100 | 37 |
| 121 | 122 | 49 | 41 | 83.35 | 66 | 34 | 56 | 98 | 38 |
| 123 | 125 | 51 | 42 | 82.50 | 64 | 33 | 54 | 102 | 36 |
| -2 | -3 | -2 | -1 | .85 | 2 | 1 | 2 | -4 | 2 |

ARCHAEOLOGICAL REMAINS

The expedition was not equipped to do archaeological work, but studies were made of the ancient ruins in the Andes region, and of some previously unreported remains in the interior of Bolivia.

Mounds at Trinidad, Bolivia. Just below Trinidad on the Mamore River, there is a mound so large that it gives the name La Loma to the home and cattle ranch of Sr. Suarez. In digging to determine whether or not the mound was artificially built, we found a very badly decomposed human skeleton in situ at a depth of eight feet. The mound was originally about twenty-five feet high and one hundred and fifty feet in diameter, but it had been cut down on one side to make room for a house and a graded road to it (plate 23, a). We looked about the country and located several other mounds. No excavations have been made in this territory, and we know nothing of the ancient culture represented here.

Burial Towers, Colocolo, Bolivia. At Colocolo, on the high plateau between Oroyo and La Paz, there are groups of peculiar adobe burial towers. A square-topped structure from ten to fifteen feet high, ten to twelve feet wide, and five or six feet thick, was built up solid with adobe bricks excepting for a small arched central chamber on the original surface, and an entrance niche. After the tower was completed, the wrapped body of the dead was placed inside and the door blocked (plate 23, b).

Circular Burial Tower, Peru. A very common type of circular burial tower was found north of Lake Titicaca in Peru. These are remarkable for their perfection in form and masonry. Farther north in the vicinity of Oroyo, a new type was found, built of small flat stones on mountain tops. These towers often stand one against the other, and are usually two stories high. A single section is four or five feet wide and eight feet high, with a small opening at the floor of each story (plate 24, a).

Petroglyphs. While resting over a day at the Peruvian Colony on the Perené River in Peru, we made a study of some petroglyphs,



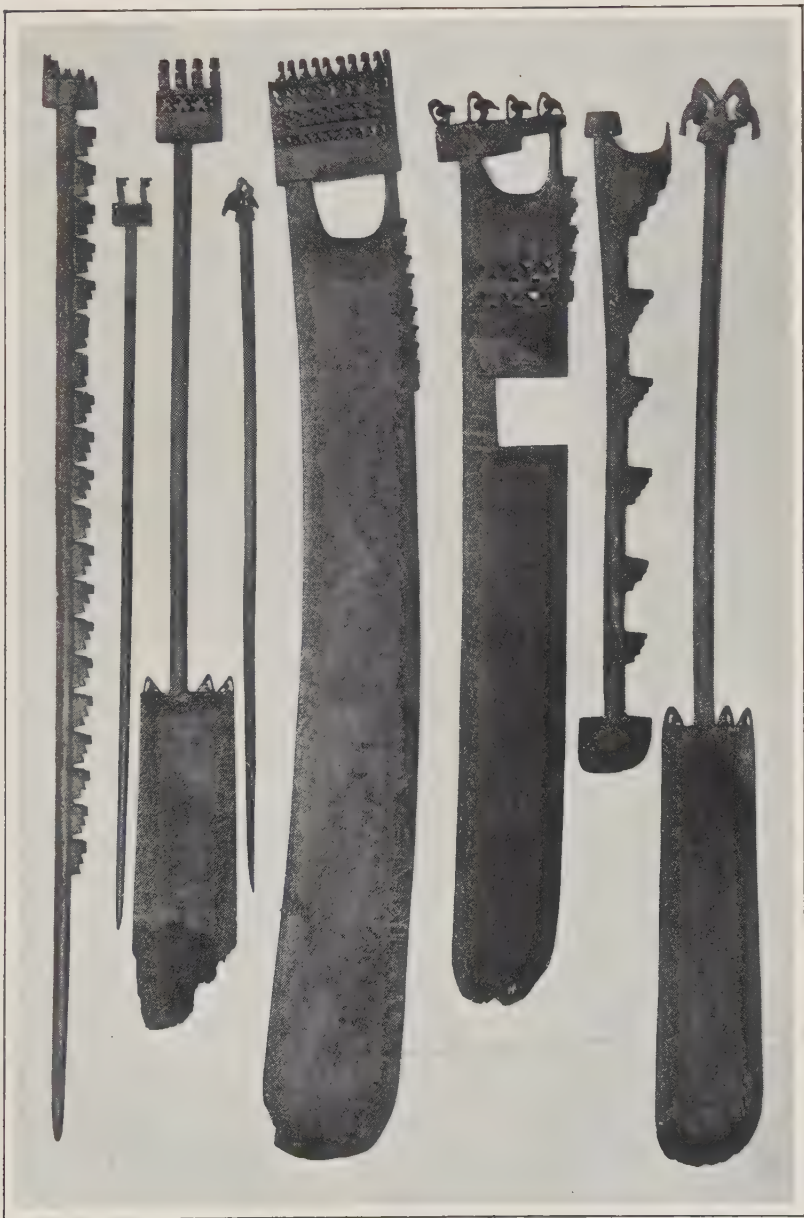
a, Mound at Trinidad, Bolivia; *b*, Adobe burial towers, Colocolo, Bolivia



a, Burial tower near Oroyo, Peru; *b*, Petroglyphs on the Paucartambo River



Pottery vessels from prehistoric graves near Nasca, Peru. (1/6.)



Wooden implements from prehistoric graves, Pisco, Peru. (1/14.)



Gold necklace from excavation at Ferriñofe, Peru. (About 1/2.)

three miles up the Paucartambo River. An enormous red granite boulder, roughly 60 by 150 feet, and 40 feet high, stands in the water on the right bank of the river. The lower part, 30 feet next the river, is vertical, but the top is oval-shaped. Originally more than half of this upper part was covered with glyphs of various forms, as seen in plate 24, b. Some of the grooves were so weathered that it was impossible to trace their lines, while others are a half inch deep, and an inch and a half wide. As the river is unnavigable, the glyphs must have been intended for an observer on the high land across the river. A bridge has now been anchored to the rock, and a trail cut around its upstream side. No other glyphs were reported in the region.

Collections. In addition to those made by the expedition in the field, some very valuable collections were purchased. They include the following specimens: several hundred choice pieces of ancient pottery from the coast of Peru, representing various cultures from Truxillo to Nasca (next to that of the early fisher-folk, the Nasca appears to be the earliest culture along the coast), and containing the most striking examples of ceramics, characterized by an extraordinary variety of color (a few of these are illustrated in plate 25); a large collection of perfectly preserved wooden specimens, such as agricultural and other implements, paddles, clubs, and strange ceremonial objects of various forms, all from excavations near Pisco, Peru, examples of which are shown in plate 26; a gold necklace made of twenty-eight human faces, three-quarters of an inch in diameter, dug up at Ferriñofe, Peru, a splendid unique piece, plate 27; and a Mission Indian basket from southern California bought in Lima, Peru, whence it had been carried so long ago that its history had been forgotten. The owner thought it had come from the Amazon Indians in Colonial times. It is the best Mission basket with a lid extant.

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Yurucare women grinding corn

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